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HUMAN RESOURCES FOR SCIENTIFIC ACTIVITIES AT UNIVERSITIES AND COLLEGES, JANUARY 1978

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Technical Notes and Detailed Statistical Tables

SURVEYS OF SCIENCE RESOURCES SERIES

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

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CONTENTS

Page

General Notes v

Appendixes:

A. Technical Notes 1

B. Detailed Statistical Tables 7

C. Reproduction of Covering Letter, Questionnaire, and Instructions 63

GENERAL NOTES

- Earlier issues of this report were entitled *Detailed Statistical Tables. Manpower Resources for Scientific Activities at Universities and Colleges.*

- The data published here represent the final results of the January 1978 Survey of Scientific and Engineering Personnel Employed at Universities and Colleges. These tables present national estimates based on responses from 1,742 institutions of higher education and their 21 affiliated federally funded research and development centers (FFRDC's), out of the 2,228 that were believed to offer degree-credit courses in the sciences and engineering. The survey did not include schools of art, music, law, theology, and other specialized institutions that have no programs in the sciences and/or engineering.

- The 1978 data collection effort represents the sixth full-scale academic science and engineering (S/E) personnel survey conducted on an annual basis. Between 1965 and 1971 the survey was conducted biennially in conjunction with the survey of academic R&D expenditures.

- Data for the 21 university-administered FFRDC's are collected and tabulated separately. Each parent institution is requested to include in its response all scientists and engineers employed in its regional campuses, medical school, or agricultural experiment station, as well as in research institutes and computer centers that may or may not have particular departmental affiliation.

- Details shown in statistical tables may not add to totals because of rounding.

- See the technical notes, appendix A for a detailed explanation of the survey universe, methodology, and limiations of the data; appendix B, for further information on inclusions and definitions; and appendix C, for a facsimile of the questionnaire and instructions.

- Requests for additional information concerning the survey findings should be addressed to Mr. James Hoehn or Mrs. Esther Gist, Universities and Nonprofit Institutions Studies Group, Division of Science Resources Studies, National Science Foundation, Washington, D.C. 20550. (202) 634-4673. Data tapes for January 1978 and prior surveys may be purchased from:

  Moshman Associates, Inc.
  6400 Goldsboro Road
  Washington, D.C. 20034
  (301) 229-3000

APPENDIX A
Technical Notes

Scope of Survey

Survey questionnaires were mailed in mid-February 1978 to more than 2,200 institutions of higher education and 21 university-administered federally funded research and development centers (FFRDC's). The survey universe included all institutions of higher education, including 2-year institutions, that were identified by NSF as offering degree-credit courses in the sciences or engineering. The survey excluded such institutions as schools of art, music, law, theology, and others without programs in the sciences and engineering.

The survey population is reviewed during each survey cycle for appropriate institutional coverage. For example, at the beginning of each survey, NSF conducts a review of institutions newly added to the *Education Directory, Colleges and Universities*[1] for those that offer courses in the sciences and engineering. As a result, 29 institutions were added to the 1978 survey. Also, during the course of the survey, six institutions were deleted because of ineligibility for inclusion, school closings, or mergers. At survey closeout in late August 1978, 2,228 universities and colleges and 21 university-associated FFRDC's remained in the study. Of these institutions, 1,763, or 79 percent, responded. This compared with an 87-percent response rate in the 1977 survey. Based on explanations resulting from telephone inquiries to university and college officials while data editing was in process, the declining response rate in 1978 was often attributed to a general inability to complete large numbers of survey forms from all sources and to take care of the academic paperwork in general. In addition, the 1978 survey had been expanded by adding questions on the full-time-equivalent (FTE) of employed scientists and engineers and their R&D involvement. Those items were "optional" in the 1977 survey.

The vast majority of nonrespondents were small institutions. Among approximately 300 Ph.D.-granting institutions that account for virtually all academic research, only 31 were nonrespondents. These doctorate-granting institutions also account for about two-thirds of all academic scientists and engineers. Two-year institutions made up more than one-half of all nonrespondents.

Estimates for Nonresponse

Estimates were made for institutions that failed to respond to the survey, in order to provide overall data for academic employment of scientists and engineers. These "imputations" for nonrespondents were based primarily on key item totals reported (or estimated) in the prior survey year. Totals for these institutions were inflated or deflated according to overall rates of change for data supplied by respondents at the same degree level and the same type of governance (public or private). Detailed imputations were then made on the basis of the distribution computed for similar institutions. The same imputation methodology was used in both the 1977 and 1978 survey.

Tables A-1—A-3 which are broken down by individual survey items, show imputation rates in percentage terms for each statistical cell on the survey questionnaire. For example, of the total headcount of full-time scientists and engineers employed at academic institutions in 1978, 12 percent were estimated based on imputation methodology explained above. The imputation rates are considerably higher, of course, for certain items representing finer details of data, such as employment of scientists and engineers in 2-year institutions. That group, having the largest number of nonrespondents, had a 28-percent imputation rate for full-time employment of scientists and engineers.

Among individual items on the 1978 questionnaire, the largest imputation rates were for data collected on the FTE scientists and engineers (table A-2) employed in various functions such as teaching and research. For instance, the imputation rate was 29 percent for the FTE distribution of total counts of full-time scientists and engineers involved in R&D activities as reported in item 1. In terms of detailed disciplines reported in item 6, the imputation rates were generally higher for R&D involvement than was the case for overall estimates reported for the same function in items 1 and 3 (i.e., full-time and part-time). Accordingly, an imputation rate of 35 percent of total FTE's devoted to R&D activities resulted from detailed discipline breakdowns in item 6, compared with 29 percent in item 1 (full-time scientists and engineers) and 22 percent in item 3 (part-time scientists and engineers). These differences reflect largely the inclination of some institutional respondents to report overall estimates for FTE involvement in the R&D function, while being reluctant to report or lacking adequate records on which to base detailed information needed to report at the level of disciplines. It should also be noted that item 6 on FTE involvement in R&D activities was newly added to the form in 1978 and a number of institutions had not designed or developed data systems to supply these estimates.

The total number of FTE scientists and engineers engaged in R&D activities differs on three tables shown in this report; e.g., table B-20 shows that 57,123 FTE academic scientists and engineers were working on R&D activities in 1978, compared with 55,164 as shown in tables B-50 and B-51. The difference of 1,959 FTE scientists and engineers in academic R&D activities between the three tabulations primarily results from the following: (1) Statistics in table B-20 were compiled on the basis of estimates of totals in items 1 and 3 showing a 3-way split of FTE activities—teaching, research and development, and other activities—while data in tables B-50 and B-51 were reported according to detailed breakdowns in item 6 of personnel in 22 academic disciplines. (2) Since many institutions were willing to provide aggregative estimates of R&D involvement in items 1 and 3, but not by detailed discipline as called for in item 6, the response rate for data in table B-20 was higher than for tables B-50 and B-51 (imputations were made for nonrespondents).

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[1] National Center for Education Statistics. *Education Directory, Colleges and Universities, 1976-77* (Washington, D.C. 20402: Supt. of Documents, U.S. Government Printing Office).

Limitations and Modifications of Survey Coverage

Since the universe for the survey consisted of all institutions of higher education identified by NSF as having S/E programs, the data presented are not subject to a sampling error. Statistics shown in this report, however, are subject to considerations of reliability and validity mainly because lack of uniformity and comparability in academic record-keeping practices result in reporting differences. In addition, as pointed out above, reporting of certain data items is uneven because of differing levels of institutional response, as is reflected in imputation rates.

A number of studies have been conducted by NSF staff and under contractual arrangements to evaluate the quality of institutional reporting practices. The most recent of these evaluative efforts covered the 1978 academic personnel survey data, as well as two other NSF surveys on R&D expenditures and graduate science students and postdoctorals.[2]That study consisted of a sample of 45 major research universities where site visits and interviews were conducted with NSF survey respondents and other academic officials such as research administrators.

The major findings from the study of 45 universities show that actual reporting practices differ in a number of aspects from the NSF personnel survey instructions and that respondents encounter a number of reporting problems, particularly as they pertain to the following elements:

1. Reporting by department rather than field

Forty-one of the 45 sampled institutions reported to NSF on the basis of an "employing department" concept or something very similar. These similar concepts included "contracting department," "cost centers," "paying department," etc. Usually, institutional respondents matched their department titles with the disciplinary taxonomy shown on the NSF personnel survey instructions. They then reported all of their professional employees in these departments under a single NSF discipline. In terms of interdisciplinary laboratories, most of the institutions followed the same reporting practices, particularly when these laboratories had departments of assignment.

2. Function in which primarily employed and full-time-equivalents

Nearly all of the university officials interviewed expressed the opinion that neither the primarily employed concept nor FTE's provides a high level of accuracy. The primarily employed concept generally understates research involvement and inflates the teaching function. The major advantage of the primarily employed concept, as was pointed out numerous times during the campus interviews, was ease of reporting. Because of that benefit, the response rate was higher in the 1978 survey for the primarily employed than for the FTE concept. Of the sampled institutions, more than one-third did not report the FTE of their research involvement by field of science.[3] Only one institution did not report either primarily employed data or FTE's.

The advantage that the FTE concept has over the primarily employed one is that it comes closer to being a more valid measure of the research involvement of scientists and engineers. When asked the question: "In your opinion, which set of data gives a more accurate picture of the research effort of your institution—FTE's or primarily employed?," nine-tenths indicated "FTE's."[4] The reason given by nearly all institutions was that the very person who is most often associated with academic research—the full professor who is primarily a teacher—is not covered by that measure. Ninety-five percent of the sampled institutions indicated that to be their major concern.

Even though the FTE concept provided a more sensitive measure of academic research involvement, it has special problems of its own. Many of these problems resulted from the reporting practices of institutions, which were often based on outside sources of research funds (i.e., sponsored research) supporting the faculty members' salaries. As one institutional respondent observed:

> "Only that percent of their salaries funded by restricted funds (i.e., primarily from sponsored research awards) was used to show percent effort in R & D activity. The University-funded part of faculty salaries in fact supports all unsponsored research and departmental administration activity. Often salaries are initially charged to clearing or other University accounts and later recharged to restricted funds. Therefore, [FTE] data may show disproportionately less effort devoted to research activity than is actually the case."

In terms of actual reporting practices, more than one-half of the institutions reporting FTE data based them on the percentage relationships between an individual's salary and income from sponsored research. Thus, as pointed out above, all internally supported research, including departmental research, disappears in the calculation.[5] Most of the remaining institutions based their FTE reports to NSF on informal surveys of deans and department chairpersons and on time-and-effort reporting.

A common reporting practice utilized to calculate primarily employed data was to review position titles of professional staff. Those that have research titles such as "Research Professor" fall within the "primarily employed in research" category while all others are reported as teachers, administrators, etc. Many of the primarily employed reporting practices are based on the FTE concept, which in turn may be calclated from data obtained in income and salary files, time-and-effort reporting, etc. In one case, the primarily employed data were based on "personal knowledge" and in another on "rules of thumb."

3. Full-time and part-time employment

Reporting of full-time and part-time employment was relatively easy and straightforward for most institutions. Thirty-three of the 45 sampled institutions defined full-time employment in terms of 100-percent employment, or 40 hours per week, or 100 percent in terms of salary level. Among the remaining institutions, definitions of full-time employment varied widely. One institution separated full-time from part-time employees by reporting "just Instructors" in the latter category because of the absence of an institutional definition. Another institutional respondent stated that there was "no clear definition of part-timers because few would identify their FTE employment due to mini-maxi salary considerations." As a result, that institution must report to NSF from estimates based on salary level. One institution's definition of full-time employment was anyone who works more than 2,080 hours for it per annum. Another's definition was anyone who works more than 37-1/2 hours per week, or who taught six credit hours or more. One intitution based its report to NSF on information collected on data cards in a survey of deans and department chairpersons. Another has no part-time employees. One used various criteria to define part-time employment such as exclusion of all continuous employees, eligibility for fringe benefits, and exclusion of any temporary employee if they have the equivalent of a nine-month contract. Three institutions had standards based on FTE employment below 100 percent. One of them defined a full-time employee as anyone who works 95 percent or more for the university; another, one who works at a 40-percent level; and the third, at 50 percent or 20 hours per week.

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[2] *National Center for Higher Education Management Systems, NSF Academic Science Statistics Postenumeration Study - Final Report.* Joint report by the National Science Foundation and the National Center for Higher Education Management Systems, Oct. 6, 1978, out of print.

[3] This response analysis is based on the 1977 personnel survey form which carried the FTE item as "optional." In the 1978 survey, the response rate was much better. All but five of the 45 sampled institutions responded to the FTE item in 1978 and a large university central system indicated that it would provide FTE data in future NSF surveys. An indication of overall response to the FTE item in 1978 is that of the institutional respondents among the 100 leading universities (i.e., in terms of academic R&D expenditures) 83 percent provided data on FTE involvement in research.

[4] One institution replied that "neither one presents a valid measure;"another indicated that the primarily employed concept only gives a relatively accurate picture of research involvement at its medical center; only two institutions voted just for the primarily employed measure.

[5] The NSF definitions of *research* used in the personnel survey include departmental research that is part of general instruction funds, contrary to most reporting practices. See appendix C. p.

Thirty-three of the institutions indicated that the basic data to report full-time and part-time employment were on central files. Only one institution had special problems involved in classifying part-timers into their primary functions (i.e., teaching, research) and indicated that these data were "especially error prone and were the same as headcounts." All but one institution assigned part-time employees to academic departments or their equivalent.

4. Highest earned degree

Reporting of data on the highest earned degree of professional employees was done with relative ease by most institutions in the study sample. Four of the 45 institutions were nonrespondents to this item, including a large university system. Three of them were nonrespondents because highest earned degree data were not kept on central files and the fourth because they were not updated and consequently their quality was suspect.

Two-thirds of the sampled institutions maintained highest earned degree data on central files, most commonly personnel, payroll, or budget files. Approximately one-fourth of the institutions based their report to NSF on department records or estimates. Two institutions combined computer listings from central records with departmental and faculty reviews. One institution reported in terms of "personal estimates based on listings of individuals and degrees earned." One institution stated that degree data are "rough estimates based on probable percentages derived several years ago by the Compensation Manager." That institution was"....very much concerned about individual privacy issues and kept no central files on degree levels." One institution reported to NSF for one of its parts from central files (even though data on Ed.D.'s were not available) while the reports for two other parts were based on "unknown sources."

The most frequently encountered procedure to update the highest earned degree information, used by 27 of the sampled institutions, was "individual initiative." Most of these institutions, while leaving the updating of the file up to individuals, had some sort of review procedure by academic deans or departmental staff for certification. Also, most of the persons interviewed in institutions using that procedure felt that the degree files were current because promotions become somewhat dependent on attaining higher degree levels. Eleven of the institutions had systematic updates of central degree files at least once a year, or updated these files as part of collecting personnel data for NSF. The remaining institutions in the sample gave varying answers including: "the data were not very current;" "their accuracy varied from department to department;" "they were updated regularly only for this university's own graduates;" and "although the highest degree data were on a computer file, they were not current and the University Bulletin was reviewed individual by individual to make them current."

In only two institutions was the system for maintaining and updating degree attainment of part-timers different than that used for full-timers. In one institution, their central personnel files were only maintained for degree levels achieved by full-time employees. In the second case, the data were not considered to be current and they estimated the NSF submission by classifying all part-timers as "Bachelor's recipients."

5. Sex of full-time professional employees

These data on men-women employment of full-time scientists and engineers were the most accurate statistics obtained by NSF in its 1978 personnel survey. They were reported with relative ease from central records by most institutions and were readily known by departmental respondents in others. Thus, all of the institutional respondents were able to furnish NSF statistics for that item and there were no complaints about quality raised in the campus interviews.

6. Postdoctoral

The instructions to the 1978 NSF personnel survey specified that postdoctorals working in the sciences and engineering should have been included as professional employees. All but three of the sampled institutions attempted to include postdoctorals in the counts of professionals. Most of them stated that postdoctorals were considered to be "exempt" employees (i.e., exempt from the Fair Labor Standards Act) and were included on central payroll files. In several institutions, postdoctorals qualified for certain benefits, including medical services and parking, and their identity was thus known.

In many institutions, perhaps the majority, the concept of a postdoctoral was a nebulous one. As one institutional official stated in the interview: "Postdoctoral students were included if they were employed as professionals, i.e., if they had a professional occupation code. Postdoctorals on stipends were not reported because they were not on the payroll system. In general, postdoctorals could not be identified through a central MIS."

This inability to identify postdoctorals in central data files was echoed by 18 of the sampled institutions. In addition, a substantial number expressed doubt about the comprehensive coverage of them in payroll files since many were utilized on research projects, paid by outside funding sources, and thus missed in central accounts. This would also have been true of postdoctoral fellows who were mailed checks directly from private foundations or agencies.

Table A-1.—Imputation rates for scientists and engineers at all universities and colleges by field and function in which primarily employed, employment status, educational attainment, and sex: January 1978

Full time

Item 1. Field of Employment	Total	Teaching	R&D	Other
Engineers (Total)	9.4	11.7	15.9	11.0
(1) Aeronautical & Astronautical Engr.	5.4	9.3	32.6	0.0
(2) Chemical Engineers	10.5	13.1	12.1	13.0
(3) Civil Engineers	10.6	11.6	17.2	12.5
(4) Electrical Engineers	10.8	13.1	19.1	10.3
(5) Mechanical Engineers	11.6	12.7	16.3	12.0
(6) Other Engineers	8.9	12.5	13.6	7.6
Physical Scientists (Total)	12.3	14.2	13.9	11.6
(1) Chemists	13.4	14.4	14.4	9.8
(2) Physicists	11.1	13.4	16.8	13.5
(3) Other Physical Scientists	11.4	18.0	3.6	20.9
Environmental Scientists (Total)	8.9	12.4	11.4	12.9
(1) Earth Scientists	9.6	11.7	7.6	9.0
(2) Atmospheric Scientists	5.1	6.4	9.2	53.3
(3) Oceanographers	8.1	23.7	17.5	9.8
Mathematical Scientists (Total)	13.5	14.3	11.1	13.7
(1) Mathematicians	13.3	13.9	12.8	16.2
(2) Computer Scientists	14.0	16.4	9.0	20.0
Life Scientists (Total)	11.9	13.7	12.2	5.2
(1) Agricultural Scientists	6.4	7.9	9.5	1.0
(2) Biological Scientists	13.1	14.5	14.2	7.6
(3) Medical Scientists	12.4	14.2	11.8	8.4
Psychologists (Total)	13.2	13.5	14.0	13.5
Social Scientists (Total)	12.7	13.4	15.2	5.8
(1) Economists	11.2	12.8	11.4	2.6
(2) Sociologists	14.0	14.3	12.7	10.2
(3) Political Scientists	13.0	13.5	15.2	8.0
(4) Other Social Scientists	12.6	12.6	21.5	6.6
Total Headcount	12.0	13.6	13.0	7.4
FTE Distribution, by Function	12.0	23.7	29.2	22.3

Item 2. Highest Earned Degree				
Doctorate-Holders, by Type				
Ph.D. or Sc.D.	18.1	19.5	25.0	14.5
Ed.D., J.D., etc.	22.0	22.4	36.3	19.2
M.D., D.D.S., D.V.M., etc.	23.0	28.5	29.0	25.9
Master's	20.7	25.4	27.5	15.9
Bachelor's or the Equivalent	20.5	28.7	24.8	10.0
Total	12.0	13.6	13.0	7.4

Part time

Item 3. Field of Employment				
Engineers (Total)	15.2	17.8	22.2	33.9
(1) Aeronautical & Astronautical Engr.	11.3	16.2	46.9	0.0
(2) Chemical Engineers	15.1	19.6	13.0	60.0
(3) Civil Engineers	17.2	19.0	17.0	62.5
(4) Electrical Engineers	15.5	17.2	36.6	0.0
(5) Mechanical Engineers	15.9	18.1	25.0	12.5
(6) Other Engineers	16.3	20.9	17.6	40.0
Physical Scientists (Total)	17.3	19.6	13.0	9.3
(1) Chemists	17.9	20.3	10.0	13.6
(2) Physicists	15.7	17.8	18.0	5.6
(3) Other Physical Scientists	18.8	19.8	15.1	0.0

Environmental Scientists (Total)	12.8	15.5	10.9	10.5
(1) Earth Scientists	13.0	16.0	8.4	13.3
(2) Atmospheric Scientists	5.0	7.4	8.5	0.0
(3) Oceanographers	18.4	18.3	19.2	0.0
Mathematical Scientists (Total)	19.2	19.5	14.5	39.7
(1) Mathematicians	19.5	20.0	17.0	19.2
(2) Computer Scientists	18.3	18.1	11.6	50.0
Life Scientists (Total)	20.5	22.2	15.6	14.8
(1) Agricultural Scientists	11.4	15.2	5.2	0.0
(2) Biological Scientists	19.8	22.0	17.6	34.2
(3) Medical Scientists	21.4	22.8	16.0	14.6
Psychologists (Total)	18.1	19.1	12.0	12.8
Social Scientists (Total)	16.4	16.9	16.7	11.6
(1) Economists	15.8	16.6	20.6	23.1
(2) Sociologists	19.0	19.4	15.3	26.9
(3) Political Scientists	14.6	15.3	16.2	1.4
(4) Other Social Scientists	16.1	16.6	15.8	9.3
Total Headcount	18.2	19.4	15.7	15.8
FTE Distribution, by Function	29.6	32.9	21.5	28.8

Item 4. Highest Earned Degree

Doctorate-Holders, by Type				
Ph.D. or Sc.D.	26.8	24.3	48.8	27.1
Ed.D., J.D., etc.	30.6	29.9	54.3	11.1
M.D., D.D.S., D.V.M., etc.	31.3	31.6	47.4	32.6
Master's	26.5	26.8	44.8	22.8
Bachelor's or the Equivalent	29.4	28.9	38.3	34.8
Total	18.2	19.4	15.7	15.8

Sex

Item 5. Field of Employment	Total	Men	Women
Engineers (Total)	9.4	10.1	6.6
(1) Aeronautical & Astronautical Engr.	5.4	5.5	0.0
(2) Chemical Engineers	10.5	11.5	21.9
(3) Civil Engineers	10.6	11.3	8.8
(4) Electrical Engineers	10.8	11.6	4.3
(5) Mechanical Engineers	11.6	12.6	4.9
(6) Other Engineers	8.9	9.4	7.5
Physical Scientists (Total)	12.3	12.8	14.0
(1) Chemists	13.4	14.0	14.9
(2) Physicists	11.1	11.5	12.8
(3) Other Physical Scientists	11.4	12.0	10.0
Environmental Scientists (Total)	8.9	9.2	8.7
(1) Earth Scientists	9.6	10.0	9.7
(2) Atmospheric Scientists	5.1	5.2	2.9
(3) Oceanographers	8.1	8.3	7.4
Mathematical Scientists (Total)	13.5	13.8	15.5
(1) Mathematicians	13.3	13.6	15.9
(2) Computer Scientists	14.1	15.0	14.2
Life Scientists (Total)	11.9	12.0	15.0
(1) Agricultural Scientists	6.6	6.6	4.8
(2) Biological Scientists	13.0	13.3	15.9
(3) Medical Scientists	12.4	12.8	15.3
Psychologists (Total)	13.2	13.2	15.4
Social Scientists (Total)	12.7	13.4	14.0
(1) Economists	11.2	11.7	13.0
(2) Sociologists	14.0	14.9	14.2
(3) Political Scientists	13.0	14.1	13.5
(4) Other Social Scientists	12.6	13.5	15.9
Total Headcount	12.0	12.3	14.6

Table A-2.—Imputation rates for scientists and engineers at all universities and colleges by field in which primarily employed: full time, part time, and full-time-equivalents (FTE): January 1978

Item 6. Field of Employment	Total	Full Time	Part Time	Total FTE's	FTE's Devoted to R&D
Engineers (Total)	10.4	9.4	15.2	24.7	32.2
(1) Aeronautical & Astronautical Engr	6.2	5.4	11.3	14.7	30.6
(2) Chemical Engineers	11.0	10.5	15.1	22.9	35.4
(3) Civil Engineers	11.9	10.6	17.2	24.1	31.5
(4) Electrical Engineers	11.7	10.8	15.5	26.2	31.4
(5) Mechanical Engineers	12.3	11.6	15.9	25.2	27.1
(6) Other Engineers	9.9	8.9	16.3	25.1	34.2
Physical Scientists (Total)	13.0	12.3	17.3	27.8	33.6
(1) Chemists	14.0	13.4	17.9	30.0	35.6
(2) Physicists	11.5	11.1	15.7	24.9	33.1
(3) Other Physical Scientists	12.8	11.4	18.8	27.9	28.3
Environmental Scientists (Total)	9.3	8.9	12.8	24.0	32.7
(1) Earth Scientists	10.0	9.6	13.0	23.1	29.7
(2) Atmospheric Scientists	5.1	5.1	5.0	21.5	33.7
(3) Oceanographers	9.0	8.1	18.4	29.6	38.6
Mathematical Scientists (Total)	14.7	13.5	19.2	29.7	28.6
(1) Mathematicians	14.6	13.3	19.5	29.9	29.4
(2) Computer Scientists	15.2	14.0	18.2	29.0	27.1
Life Scientists (Total)	13.2	11.7	20.5	27.0	36.3
(1) Agricultural Scientists	6.2	6.4	11.4	15.0	29.3
(2) Biological Scientists	13.8	13.1	19.8	29.2	34.5
(3) Medical Scientists	14.5	12.3	21.4	28.1	38.9
Psychologists (Total)	14.4	13.2	18.1	30.2	29.9
Social Scientists (Total)	13.4	12.7	16.3	28.9	32.8
(1) Economists	12.1	11.2	15.6	25.7	29.3
(2) Sociologists	15.0	14.0	18.9	30.2	31.0
(3) Political Scientists	13.2	12.9	14.4	30.2	33.4
(4) Other Social Scientists	13.0	12.5	15.9	29.0	38.1
Total Headcount	13.1	11.9	18.3	28.0	34.7

Table A-3.—Imputation rates for technicians at all universities and colleges by field and function in which primarily employed: January 1978

Item 7. Field of Employment	Total	R&D	Other Activities
Engineering Technicians	15.6	24.0	18.4
Physical Science Technicians	11.9	13.9	15.0
Environmental Science Technicians	9.8	9.9	15.0
Mathematical & Computer Science Technicians	15.0	17.2	18.6
Life Science Technicians	17.4	18.1	25.2
Psychology Technicians	1.4	2.8	5.3
Social Science Technicians	2.2	6.3	5.0
Total	15.7	17.5	19.8

APPENDIX B

Statistical Tables

NOTE: Tables B-1, B-2, B-13, B-21, B-23, B-25, B-38, B-40, B-42, and B-44, combine full-time and part-time scientists and engineers.

SCIENTISTS AND ENGINEERS EMPLOYED IN INSTITUTIONS OF HIGHER EDUCATION

Page

Trends

B-1. By field: 1965-78 9

B-2. By primary function: 1965-78 9

B-3. By field and status: 1965-78 10

B-4. By type of institution and status: 1965-78 10

B-5. Full time, by field and institutional control: 1969-78 11

B-6. Full time, by institutional control and level of attainment: 1969-78 11

B-7. Full time, by field and sex: 1975-78 12

By Type of Institution

B-8. In institutions awarding doctorate degrees in the sciences or engineering, by field, institutional control, and status: January 1978 12

B-9. In institutions awarding master's degrees in the sciences or engineering, by field, institutional control, and status: January 1978 13

B-10. In institutions awarding bachelor's degrees in the sciences or engineering, by field, institutional control, and status: January 1978 13

B-11. In institutions awarding degrees in fields other than in the sciences or engineering, by field, institutional control, and status: January 1978 14

B-12. In 2-year institutions, by field, institutional control, and status: January 1978 14

By Field, Employment Status, Institutional Control, Educational Attainment, Primary Function, and Sex

B-13. By field and primary function: January 1977 and January 1978 15

B-14. Full time, by field and primary function: January 1977 and January 1978 15

B-15. By field, institutional control, and status: January 1978 16

B-16. By type of institution, status, institutional control, and primary function: January 1978 16

B-17. By type of institution, status, and primary function: January 1977 and January 1978 17

B-18. By type of institution, status, and field: January 1978 17

B-19. By type of institution, status, and level of attainment: January 1977 and January 1978 18

B-20. Full-time-equivalents, by type of institution, status, and primary function: January 1978 18

B-21. By field, institutional control, and primary function: January 1978 19

B-22. Full time, by field, institutional control, and primary function: January 1978 19

B-23. By field and type of institution: January 1977 and January 1978 20

B-24. Full time, by field and type of institution: January 1977 and January 1978 20

B-25. By primary function, type of institution and level of attainment: January 1977 and January 1978 21

B-26. Full time, by primary function, type of institution, and level of attainment: January 1977 and January 1978 21

B-27. Full time, by field and sex: January 1978 22

B-28. Full time, by type and control of institution, and sex: January 1978 22

At 50 Leading Universities

B-29. Full time, at 50 leading universities and colleges: January 1977 and January 1978 23

B-30. Full time, at 50 leading public universities, by field and sex: January 1978 24

B-31. Full time, at 50 leading private universities, by field and sex: January 1978 25

B-32. Full time, at 50 leading institutions awarding doctorate degrees in the sciences or engineering, by field and sex: January 1978 26

B-33. Full time, at 50 leading institutions awarding master's degrees in the sciences or engineering, by field and sex: January 1978 27

B-34. Full time, at 50 leading institutions awarding bachelor's degrees in the sciences or engineering, by field and sex: January 1978 28

B-35. Full time, at 50 leading 2-year institutions, by field and sex: January 1978 29

By Geographic Distribution

B-36. By division, State, institutional control, and status: January 1978 30
B-37. By division, State, status, and primary function: January 1978 31
B-38. By division, State, and field: January 1978 32
B-39. Full time, by division, State, and field: January 1978 33
B-40. By division, State, institutional control, and primary function: January 1978 34
B-41. Full time, by division, State, institutional control, and primary function: January 1978 35
B-42. By division, State, and type of institution: January 1978 36
B-43. Full time, by division, State, and type of institution: January 1978 37
B-44. By division, State, and level of attainment: January 1978 38
B-45. Full time, by division, State, and level of attainment: January 1978 39
B-46. Full time, by division, State, and sex: January 1978 40

In Research and Development

B-47. By field, institutional control, and status: January 1978 41
B-48. In institutions awarding doctorate degrees in the sciences or engineering, by field, institutional control, and status: January 1978 41
B-49. By division, State, institutional control, and status: January 1978 42

Full-Time-Equivalents

B-50. By field, institutional control, and primary function: January 1978 43
B-51. By field, type of institution, and primary function: January 1978 44

TECHNICIANS EMPLOYED IN THE SCIENCES AND ENGINEERING

B-52. By field and primary function: January 1977 and January 1978 45
B-53. By field and type of institution: January 1978 45

SUMMARY DATA FROM SURVEY QUESTIONNAIRES

Universities and Colleges

B-54. Summary data for 2,166 universities and colleges: January 1978 46
B-55. Summary data for 1,167 public universities and colleges: January 1978 48
B-56. Summary data for 999 private universities and colleges: January 1978 50
B-57. Summary data for 297 institutions awarding doctorate degrees in the sciences or engineering: January 1978 52
B-58. Summary data for 313 institutions awarding master's degrees in the sciences or engineering: January 1978 54
B-59. Summary data for 727 institutions awarding bachelor's degrees in the sciences or engineering: January 1978 56
B-60. Summary data for 803 2-year institutions of higher education: January 1978 58

Federally Funded Research and Development Centers (FFRDC's) (Administered by Universities and Colleges)

B-61. Summary data for 21 FFRDC's: January 1978 60

TABLE B-1. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY FIELD: JANUARY 1965-78

FIELD	1965	1967	1969	1971	1973	1974	1975	1976	1977	1978
TOTAL	178,904	212,855	231,756	257,904	264,900	268,495	278,919	288,155	297,289	306,547
ENGINEERS, TOTAL	21,681	25,253	25,387	27,130	27,530	27,198	27,919	28,505	29,878	30,900
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	1,127	1,360	1,357	1,469	1,480	1,191	1,094	1,133	1,148	1,133
CHEMICAL ENGINEERS	1,571	1,565	1,735	1,843	1,761	1,732	1,864	1,858	1,929	2,004
CIVIL ENGINEERS	3,145	3,660	3,894	4,129	4,487	4,561	4,877	5,034	5,150	5,300
ELECTRICAL ENGINEERS	5,478	6,563	6,803	6,885	6,941	6,481	6,767	6,936	6,923	7,192
MECHANICAL ENGINEERS	4,108	4,638	4,812	5,387	5,188	4,964	5,298	5,308	5,491	5,660
OTHER ENGINEERS	6,252	7,467	6,786	7,417	7,673	8,269	8,019	8,236	9,237	9,611
PHYSICAL SCIENTISTS, TOTAL	21,480	26,243	28,149	29,443	30,215	30,605	30,836	31,424	32,078	32,794
CHEMISTS	10,684	12,961	14,201	14,688	15,286	16,078	16,150	16,595	17,103	17,647
PHYSICISTS	9,132	11,127	11,766	12,195	12,184	12,138	12,323	12,213	12,492	12,790
OTHER PHYSICAL SCIENTISTS	1,664	2,155	2,182	2,560	2,745	2,389	2,363	2,616	2,483	2,357
ENVIRONMENTAL SCIENTISTS, TOTAL	4,005	5,111	5,549	6,500	6,935	7,636	7,855	8,427	9,207	9,428
EARTH SCIENTISTS 1/	4,005	5,111	5,549	6,500	5,528	5,764	5,998	6,490	6,925	6,940
ATMOSPHERIC SCIENTISTS	N/A	N/A	N/A	N/A	650	677	682	719	789	942
OCEANOGRAPHERS	N/A	N/A	N/A	N/A	757	1,195	1,175	1,218	1,493	1,546
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	13,680	17,776	22,495	24,548	24,770	27,126	28,475	29,915	31,962	32,947
MATHEMATICIANS	N/A	N/A	N/A	N/A	N/A	22,271	23,368	24,132	25,410	25,903
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	N/A	N/A	N/A	N/A	N/A	4,855	5,107	5,783	6,552	7,044
LIFE SCIENTISTS, TOTAL	75,775	87,347	97,206	110,274	112,359	110,445	113,466	114,537	117,360	122,522
AGRICULTURAL SCIENTISTS	13,507	14,950	15,150	18,039	14,970	13,308	14,287	14,175	14,172	14,925
BIOLOGICAL SCIENTISTS	24,281	27,419	29,257	31,808	33,629	35,686	38,173	40,012	42,711	43,358
MEDICAL SCIENTISTS	37,987	44,978	52,799	60,427	63,760	61,451	61,006	60,350	60,477	64,239
PSYCHOLOGISTS	9,430	11,358	14,780	16,806	18,876	19,964	21,649	22,937	23,707	23,720
SOCIAL SCIENTISTS, TOTAL	32,853	39,767	38,190	43,203	44,215	45,521	48,719	52,410	53,097	54,236
ECONOMISTS	7,932	9,662	10,402	11,263	11,376	12,049	12,655	13,134	13,840	13,970
SOCIOLOGISTS	6,261	7,558	9,451	11,323	12,483	13,016	14,234	15,182	15,474	15,316
POLITICAL SCIENTISTS	5,919	7,190	7,919	8,938	9,704	10,007	10,553	11,350	11,224	[illegible]
OTHER SOCIAL SCIENTISTS	12,741	15,357	10,418	11,679	10,652	10,449	11,277	12,744	12,559	13,630

1/ INCLUDES DATA FOR ATMOSPHERIC SCIENTISTS AND OCEANOGRAPHERS FROM 1965-71.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-2. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY PRIMARY FUNCTION: JANUARY 1965-78

PRIMARY FUNCTION	1965	1967	1969	1971	1973	1974	1975	1976	1977	1978
TOTAL	178,904	212,855	231,756	257,904	264,900	268,495	278,919	288,155	297,289	306,547
TEACHING	121,991	147,846	160,781	184,966	199,083	206,745	215,031	222,816	228,729	235,360
RESEARCH & DEVELOPMENT	40,003	44,603	47,118	48,268	46,634	47,386	49,440	50,249	52,316	54,332
OTHER	16,910	20,406	23,857	24,670	19,183	14,364	14,448	15,090	16,244	16,855

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-3. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY FIELD AND STATUS: JANUARY 1965-78

FIELD AND STATUS	1965	1967	1969	1971	1973	1974	1975	1976	1977	1978
ALL FIELDS										
TOTAL	178,904	212,855	231,756	257,904	264,900	268,495	278,919	288,155	297,289	306,547
FULL TIME	142,713	170,557	187,082	209,416	216,433	218,407	223,336	229,757	235,859	241,099
PART TIME	36,191	42,298	44,674	48,488	48,467	50,088	55,583	58,398	61,430	65,448
ENGINEERS										
TOTAL	21,681	25,253	25,387	27,130	27,530	27,198	27,919	28,505	29,878	30,900
FULL TIME	18,117	20,983	21,431	23,039	23,485	22,764	22,580	22,937	23,937	24,601
PART TIME	3,564	4,270	3,956	4,091	4,045	4,434	5,339	5,568	5,941	6,299
PHYSICAL SCIENTISTS										
TOTAL	21,480	26,243	28,149	29,443	30,215	30,605	30,836	31,424	32,078	32,794
FULL TIME	19,305	23,361	25,040	26,346	26,669	26,849	26,662	27,077	27,518	27,861
PART TIME	2,175	2,882	3,109	3,097	3,546	3,756	4,174	4,347	4,560	4,933
ENVIRONMENTAL SCIENTISTS										
TOTAL	4,005	5,111	5,549	6,500	6,935	7,636	7,855	8,427	9,207	9,428
FULL TIME	3,521	4,294	4,935	5,752	6,092	6,563	6,787	7,231	7,960	8,109
PART TIME	484	817	614	748	843	1,073	1,068	1,196	1,247	1,319
MATHEMATICAL AND COMPUTER SCIENTISTS										
TOTAL	13,680	17,776	22,495	24,548	24,770	27,126	28,475	29,915	31,962	32,947
FULL TIME	10,998	14,397	18,390	20,282	20,794	22,157	22,404	23,124	23,853	24,317
PART TIME	2,682	3,379	4,105	4,266	3,976	4,969	6,071	6,791	8,109	8,630
LIFE SCIENTISTS										
TOTAL	75,775	87,347	97,206	110,274	112,359	110,445	113,466	114,537	117,360	122,522
FULL TIME	57,135	66,620	74,882	85,907	88,423	88,497	90,684	91,829	94,248	97,238
PART TIME	18,640	20,727	22,324	24,367	23,936	21,948	22,782	22,708	23,112	25,284
PSYCHOLOGISTS										
TOTAL	9,430	11,358	14,780	16,806	18,876	19,964	21,649	22,937	23,707	23,720
FULL TIME	6,929	8,554	11,536	12,994	14,777	14,957	15,973	16,804	17,320	17,362
PART TIME	2,501	2,804	3,244	3,812	4,099	5,007	5,676	6,133	6,387	6,358
SOCIAL SCIENTISTS										
TOTAL	32,853	39,767	38,190	43,203	44,215	45,521	48,719	52,410	53,097	54,236
FULL TIME	26,708	32,348	30,868	35,096	36,193	36,620	38,246	40,755	41,023	41,611
PART TIME	6,145	7,419	7,322	8,107	8,022	8,901	10,473	11,655	12,074	12,625

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-4. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND
COLLEGES BY TYPE OF INSTITUTION AND STATUS: JANUARY 1965-78

TYPE OF INSTITUTION AND STATUS	1965	1967	1969	1971	1973	1974	1975	1976	1977	1978
ALL INSTITUTIONS										
TOTAL	178,904	212,855	231,756	257,904	264,900	268,495	278,919	288,155	297,289	306,547
FULL TIME	142,713	170,557	187,082	209,416	216,433	218,407	223,336	229,757	235,859	241,099
PART TIME	36,191	42,298	44,674	48,488	48,467	50,088	55,583	58,398	61,430	65,448
DOCTORATE IN S&E										
TOTAL	118,233	142,676	154,424	171,238	174,474	175,113	180,001	185,836	192,325	198,872
FULL TIME	94,570	114,446	124,604	140,339	143,393	144,525	147,942	153,653	159,242	163,749
PART TIME	23,663	28,230	29,820	30,899	31,081	30,588	32,059	32,183	33,083	35,123
MASTER'S IN S&E										
TOTAL	21,078	24,729	29,441	30,080	28,703	29,765	34,075	33,143	34,790	39,181
FULL TIME	17,434	20,748	25,212	25,597	24,851	24,957	27,511	26,307	27,118	29,559
PART TIME	3,644	3,981	4,229	4,483	3,852	4,808	6,564	6,836	7,672	9,622
BACHELOR'S IN S&E										
TOTAL	22,423	23,025	21,690	23,198	28,363	29,143	27,402	27,862	27,701	26,259
FULL TIME	18,673	19,328	17,927	19,623	23,620	23,940	22,548	22,867	22,615	21,213
PART TIME	3,750	3,697	3,763	3,575	4,743	5,203	4,854	4,995	5,086	5,046
NO SCIENCE DEGREE 1/										
TOTAL	17,170	22,425	26,201	33,388	33,360	34,474	37,441	41,314	42,473	42,235
FULL TIME	12,036	16,035	19,339	23,857	24,569	24,985	25,335	26,930	26,884	26,578
PART TIME	5,134	6,390	6,862	9,531	8,791	9,489	12,106	14,384	15,589	15,657

1/ INCLUDES 2-YEAR INSTITUTIONS AS WELL AS INSTITUTIONS AWARDING DEGREES IN NONSCIENCE FIELDS.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-5. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY FIELD AND INSTITUTIONAL CONTROL: JANUARY 1969-78

FIELD AND CONTROL	1969	1975	1976	1977	1978	AVERAGE ANNUAL PERCENT CHANGE 1969-75	PERCENT CHANGE 1976-77	PERCENT CHANGE 1977-78
ALL FIELDS								
TOTAL	187,082	223,336	229,757	235,859	241,099	3.0	2.7	2.2
PUBLIC INSTITUTIONS	120,325	156,819	161,689	166,091	168,365	4.5	2.7	1.4
PRIVATE INSTITUTIONS	66,757	66,517	68,068	69,768	72,734	1/	2.5	4.3
ENGINEERS								
TOTAL	21,431	22,580	22,937	23,937	24,601	.9	4.4	2.8
PUBLIC INSTITUTIONS	14,182	16,575	17,144	17,971	18,391	2.6	4.8	2.3
PRIVATE INSTITUTIONS	7,249	6,005	5,793	5,966	6,210	-3.1	3.0	4.1
PHYSICAL SCIENTISTS								
TOTAL	25,040	26,662	27,077	27,518	27,861	1.1	1.6	1.2
PUBLIC INSTITUTIONS	14,987	17,508	17,996	18,176	18,314	2.6	1.0	.8
PRIVATE INSTITUTIONS	10,053	9,154	9,081	9,342	9,547	-1.5	2.9	2.2
ENVIRONMENTAL SCIENTISTS								
TOTAL	4,935	6,787	7,231	7,960	8,109	5.5	10.1	1.9
PUBLIC INSTITUTIONS	3,584	5,334	5,739	6,293	6,424	6.9	9.7	2.1
PRIVATE INSTITUTIONS	1,351	1,453	1,492	1,667	1,685	1.2	11.7	1.1
MATHEMATICAL AND COMPUTER SCIENTISTS								
TOTAL	18,390	22,404	23,124	23,853	24,317	3.3	3.2	1.9
PUBLIC INSTITUTIONS	12,236	16,603	17,247	17,812	18,197	5.2	3.3	2.2
PRIVATE INSTITUTIONS	6,154	5,801	5,877	6,041	6,120	-1.0	2.8	1.3
LIFE SCIENTISTS								
TOTAL	74,882	90,684	91,829	94,248	97,238	3.3	2.6	3.2
PUBLIC INSTITUTIONS	47,868	62,425	62,617	64,137	65,160	4.5	2.4	1.6
PRIVATE INSTITUTIONS	27,014	28,259	29,212	30,111	32,078	1.0	3.1	6.5
PSYCHOLOGISTS								
TOTAL	11,536	15,973	16,804	17,320	17,362	5.6	3.1	.2
PUBLIC INSTITUTIONS	7,468	11,276	12,073	12,497	12,299	7.1	3.5	-1.6
PRIVATE INSTITUTIONS	4,068	4,697	4,731	4,823	5,063	2.4	1.9	5.0
SOCIAL SCIENTISTS								
TOTAL	30,868	38,246	40,755	41,023	41,611	3.6	.7	1.4
PUBLIC INSTITUTIONS	20,000	27,098	28,873	29,205	29,580	5.2	1.1	1.3
PRIVATE INSTITUTIONS	10,868	11,148	11,882	11,818	12,031	.4	-.5	1.8

1/ LESS THAN .05 PERCENT.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-6. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY INSTITUTIONAL CONTROL AND LEVEL OF ATTAINMENT: JANUARY 1969-78

CONTROL AND LEVEL OF ATTAINMENT	1969	1975	1976	1977	1978	AVERAGE ANNUAL PERCENT CHANGE 1969-75	PERCENT CHANGE 1976-77	PERCENT CHANGE 1977-78
ALL INSTITUTIONS								
TOTAL	187,082	223,336	229,757	235,859	241,099	3.0	2.7	2.2
PH.D. OR SC.D.	90,228	122,760	126,475	130,987	135,163	5.3	3.6	3.2
ED.D.	N/A	N/A	3,376	3,569	3,319	N/A	5.7	-7.0
M.D., D.D.S., ETC.	26,090	29,148	30,098	30,833	31,586	1.9	2.4	2.4
MASTER'S	52,362	54,719	53,682	53,908	54,194	.7	.4	.5
BACHELOR'S	18,402	16,709	16,126	16,562	16,837	-1.6	2.7	1.7
PUBLIC INSTITUTIONS								
TOTAL	120,325	156,819	161,689	166,091	168,365	4.5	2.7	1.4
PH.D. OR SC.D.	57,145	84,539	87,392	90,347	92,723	6.7	3.4	2.6
ED.D.	N/A	N/A	2,690	2,904	2,726	N/A	8.0	-6.1
M.D., D.D.S., ETC.	12,989	15,525	16,247	16,561	16,378	3.0	1.9	-1.1
MASTER'S	37,081	43,351	42,750	43,220	43,497	2.6	1.1	.6
BACHELOR'S	13,110	13,404	12,610	13,059	13,041	.4	3.6	-.1
PRIVATE INSTITUTIONS								
TOTAL	66,757	66,517	68,068	69,768	72,734	1/	2.5	4.3
PH.D. OR SC.D.	33,083	38,221	39,083	40,640	42,440	2.5	4.0	4.4
ED.D.	N/A	N/A	686	665	593	N/A	-3.1	-10.8
M.D., D.D.S., ETC.	13,101	13,623	13,851	14,272	15,208	.8	3.0	6.6
MASTER'S	15,281	11,368	10,932	10,688	10,697	-4.8	-2.2	.1
BACHELOR'S	5,292	3,305	3,516	3,503	3,796	-7.4	-.4	8.4

1/ LESS THAN .05 PERCENT.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-7. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY FIELD AND SEX: JANUARY 1975-78

FIELD	1975			1976			1977			1978		
	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
TOTAL	223,336	189,723	33,613	229,757	194,273	35,484	235,859	199,104	36,755	241,099	202,413	38,686
ENGINEERS, TOTAL	22,580	22,211	369	22,937	22,487	450	23,937	23,439	498	24,601	24,008	593
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	944	919	25	966	936	30	971	949	22	965	947	18
CHEMICAL ENGINEERS	1,603	1,578	25	1,637	1,600	37	1,681	1,642	39	1,726	1,694	32
CIVIL ENGINEERS	3,832	3,771	61	4,017	3,934	83	4,114	4,025	89	4,192	4,067	125
ELECTRICAL ENGINEERS	5,393	5,336	57	5,409	5,335	74	5,467	5,395	72	5,594	5,502	92
MECHANICAL ENGINEERS	4,355	4,325	30	4,353	4,308	45	4,473	4,416	57	4,543	4,482	61
OTHER ENGINEERS	6,453	6,282	171	6,555	6,374	181	7,231	7,012	219	7,581	7,316	265
PHYSICAL SCIENTISTS, TOTAL	26,662	24,665	1,997	27,077	24,970	2,107	27,518	25,320	2,198	27,861	25,418	2,443
CHEMISTS	13,823	12,395	1,428	14,146	12,632	1,514	14,456	12,899	1,557	14,711	12,987	1,724
PHYSICISTS	10,940	10,554	386	10,838	10,444	394	11,070	10,633	437	11,272	10,794	478
OTHER PHYSICAL SCIENTISTS	1,899	1,716	183	2,093	1,894	199	1,992	1,788	204	1,878	1,637	241
ENVIRONMENTAL SCIENTISTS, TOTAL ...	6,787	6,468	319	7,231	6,843	388	7,960	7,451	509	8,109	7,549	560
EARTH SCIENTISTS	5,172	4,949	223	5,523	5,237	286	5,898	5,551	347	5,920	5,516	404
ATMOSPHERIC SCIENTISTS	559	525	34	601	568	33	694	656	38	801	766	35
OCEANOGRAPHERS	1,056	994	62	1,107	1,038	69	1,368	1,244	124	1,388	1,267	121
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	22,404	19,479	2,925	23,124	20,025	3,099	23,853	20,607	3,246	24,317	20,854	3,463
MATHEMATICIANS	18,699	16,220	2,479	18,994	16,374	2,620	19,271	16,561	2,710	19,545	16,640	2,905
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	3,705	3,259	446	4,130	3,651	479	4,582	4,046	536	4,772	4,214	558
LIFE SCIENTISTS, TOTAL	90,684	72,639	18,045	91,829	73,560	18,269	94,248	75,587	18,661	97,238	77,467	19,771
AGRICULTURAL SCIENTISTS	13,235	11,685	1,550	12,942	11,777	1,165	12,884	11,815	1,069	13,594	12,375	1,219
BIOLOGICAL SCIENTISTS	33,462	27,143	6,319	34,850	27,821	7,029	36,930	29,368	7,562	37,442	29,675	7,767
MEDICAL SCIENTISTS	43,987	33,811	10,176	44,037	33,962	10,075	44,434	34,404	10,030	46,202	35,417	10,785
PSYCHOLOGISTS	15,973	12,391	3,582	16,804	12,815	3,989	17,320	13,054	4,266	17,362	13,061	4,301
SOCIAL SCIENTISTS, TOTAL	38,246	31,870	6,376	40,755	33,573	7,182	41,023	33,646	7,377	41,611	34,056	7,555
ECONOMISTS	10,169	9,304	865	10,371	9,436	935	10,685	9,731	954	10,761	9,797	964
SOCIOLOGISTS	10,744	8,104	2,640	11,428	8,501	2,927	11,625	8,594	3,031	11,449	8,430	3,019
POLITICAL SCIENTISTS	8,687	7,788	899	9,073	8,043	1,030	9,021	7,975	1,046	9,026	7,950	1,076
OTHER SOCIAL SCIENTISTS	8,646	6,674	1,972	9,883	7,593	2,290	9,692	7,346	2,346	10,375	7,879	2,496

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-8. SCIENTISTS AND ENGINEERS EMPLOYED IN INSTITUTIONS AWARDING DOCTORATE DEGREES IN THE SCIENCES OR ENGINEERING, BY FIELD, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

FIELD	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
TOTAL	133,174	113,155	20,019	65,698	50,594	15,104
ENGINEERS, TOTAL	15,288	13,296	1,992	6,355	5,090	1,265
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	482	440	42	348	308	40
CHEMICAL ENGINEERS	1,173	1,036	137	579	501	78
CIVIL ENGINEERS	2,703	2,370	333	886	673	213
ELECTRICAL ENGINEERS	2,853	2,541	312	1,677	1,300	377
MECHANICAL ENGINEERS	2,533	2,244	289	1,093	871	222
OTHER ENGINEERS	5,544	4,665	879	1,772	1,437	335
PHYSICAL SCIENTISTS, TOTAL	11,913	10,526	1,387	6,218	5,626	592
CHEMISTS	6,038	5,195	843	3,013	2,718	295
PHYSICISTS	4,807	4,386	421	2,830	2,592	238
OTHER PHYSICAL SCIENTISTS	1,068	945	123	375	316	59
ENVIRONMENTAL SCIENTISTS, TOTAL ...	4,932	4,432	500	1,409	1,261	148
EARTH SCIENTISTS	3,295	2,951	344	902	789	113
ATMOSPHERIC SCIENTISTS	633	556	77	167	156	11
OCEANOGRAPHERS	1,004	925	79	340	316	24
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	9,640	8,339	1,301	3,730	2,777	953
MATHEMATICIANS	7,470	6,457	1,013	2,661	2,105	556
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	2,170	1,882	288	1,069	672	397
LIFE SCIENTISTS, TOTAL	65,377	54,255	11,122	37,031	27,714	9,317
AGRICULTURAL SCIENTISTS	12,096	11,368	728	544	506	38
BIOLOGICAL SCIENTISTS	18,908	17,052	1,856	10,399	9,231	1,168
MEDICAL SCIENTISTS	34,373	25,835	8,538	26,088	17,977	8,111
PSYCHOLOGISTS	6,761	5,664	1,097	3,128	2,253	875
SOCIAL SCIENTISTS, TOTAL	19,263	16,643	2,620	7,827	5,873	1,954
ECONOMISTS	5,187	4,576	611	2,258	1,717	541
SOCIOLOGISTS	4,710	4,014	696	1,777	1,358	419
POLITICAL SCIENTISTS	3,375	2,980	395	1,894	1,407	487
OTHER SOCIAL SCIENTISTS	5,991	5,073	918	1,898	1,391	507

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-9. SCIENTISTS AND ENGINEERS EMPLOYED IN INSTITUTIONS AWARDING MASTER'S DEGREES IN THE SCIENCES OR ENGINEERING, BY FIELD, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

FIELD	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
TOTAL	29,084	23,271	5,813	10,097	6,288	3,809
ENGINEERS, TOTAL	1,854	1,329	525	839	531	308
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	38	25	13	10	5	5
CHEMICAL ENGINEERS	78	62	16	43	31	12
CIVIL ENGINEERS	482	336	146	109	75	34
ELECTRICAL ENGINEERS	464	315	149	294	198	96
MECHANICAL ENGINEERS	388	284	104	231	160	71
OTHER ENGINEERS	404	307	97	152	62	90
PHYSICAL SCIENTISTS, TOTAL	3,848	3,264	584	1,435	1,058	377
CHEMISTS	2,215	1,838	377	820	615	205
PHYSICISTS	1,449	1,284	165	548	406	142
OTHER PHYSICAL SCIENTISTS	184	142	42	67	37	30
ENVIRONMENTAL SCIENTISTS, TOTAL	1,275	1,072	203	172	115	57
EARTH SCIENTISTS	1,141	970	171	158	112	46
ATMOSPHERIC SCIENTISTS	61	50	11	9	2	7
OCEANOGRAPHERS	73	52	21	5	1	4
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	4,637	3,677	960	1,366	881	485
MATHEMATICIANS	3,786	3,064	722	1,076	727	349
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	851	613	238	290	154	136
LIFE SCIENTISTS, TOTAL	5,286	4,372	914	1,962	1,190	772
AGRICULTURAL SCIENTISTS	742	634	108	37	30	7
BIOLOGICAL SCIENTISTS	3,774	3,150	624	1,219	875	344
MEDICAL SCIENTISTS	770	588	182	706	285	421
PSYCHOLOGISTS	4,083	3,205	878	1,478	828	650
SOCIAL SCIENTISTS, TOTAL	8,101	6,352	1,749	2,845	1,685	1,160
ECONOMISTS	1,888	1,445	443	921	488	433
SOCIOLOGISTS	2,566	2,014	552	838	484	354
POLITICAL SCIENTISTS	1,844	1,480	364	632	455	177
OTHER SOCIAL SCIENTISTS	1,803	1,413	390	454	258	196

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-10. SCIENTISTS AND ENGINEERS EMPLOYED IN INSTITUTIONS AWARDING BACHELOR'S DEGREES IN THE SCIENCES OR ENGINEERING, BY FIELD, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

FIELD	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
TOTAL	8,120	7,174	946	18,139	14,039	4,100
ENGINEERS, TOTAL	936	863	73	573	418	155
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	83	77	6	24	20	4
CHEMICAL ENGINEERS	9	9	0	21	16	5
CIVIL ENGINEERS	147	133	14	94	62	32
ELECTRICAL ENGINEERS	216	200	16	170	131	39
MECHANICAL ENGINEERS	187	174	13	140	103	37
OTHER ENGINEERS	294	270	24	124	86	38
PHYSICAL SCIENTISTS, TOTAL	1,156	1,078	78	3,031	2,605	426
CHEMISTS	654	603	51	1,948	1,668	280
PHYSICISTS	444	420	24	1,018	885	133
OTHER PHYSICAL SCIENTISTS	58	55	3	65	52	13
ENVIRONMENTAL SCIENTISTS, TOTAL	310	274	36	367	270	97
EARTH SCIENTISTS	259	230	29	348	258	90
ATMOSPHERIC SCIENTISTS	12	9	3	11	6	5
OCEANOGRAPHERS	39	35	4	8	6	2
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	1,457	1,261	196	2,726	2,122	604
MATHEMATICIANS	1,204	1,041	163	2,306	1,845	461
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	253	220	33	420	277	143
LIFE SCIENTISTS, TOTAL	1,354	1,196	158	3,575	2,817	758
AGRICULTURAL SCIENTISTS	157	151	6	90	72	18
BIOLOGICAL SCIENTISTS	1,027	939	88	2,820	2,367	453
MEDICAL SCIENTISTS	170	106	64	665	378	287
PSYCHOLOGISTS	859	752	107	2,461	1,743	718
SOCIAL SCIENTISTS, TOTAL	2,048	1,750	298	5,406	4,064	1,342
ECONOMISTS	458	397	61	1,515	1,150	365
SOCIOLOGISTS	676	568	108	1,948	1,397	551
POLITICAL SCIENTISTS	494	435	59	1,313	1,057	256
OTHER SOCIAL SCIENTISTS	420	350	70	630	460	170

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-11. SCIENTISTS AND ENGINEERS EMPLOYED IN INSTITUTIONS AWARDING DEGREES IN FIELDS OTHER THAN THE SCIENCES OR ENGINEERING, BY FIELD, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

FIELD	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
TOTAL	143	115	28	380	280	100
ENGINEERS, TOTAL	0	0	0	11	6	5
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	0	0	0	0	0	0
CHEMICAL ENGINEERS	0	0	0	0	0	0
CIVIL ENGINEERS	0	0	0	0	0	0
ELECTRICAL ENGINEERS	0	0	0	5	3	2
MECHANICAL ENGINEERS	0	0	0	5	3	2
OTHER ENGINEERS	0	0	0	1	0	1
PHYSICAL SCIENTISTS, TOTAL	15	14	1	37	32	5
CHEMISTS	8	7	1	16	15	1
PHYSICISTS	7	7	0	15	12	3
OTHER PHYSICAL SCIENTISTS	0	0	0	6	5	1
ENVIRONMENTAL SCIENTISTS, TOTAL	0	0	0	12	10	2
EARTH SCIENTISTS	0	0	0	12	10	2
ATMOSPHERIC SCIENTISTS	0	0	0	0	0	0
OCEANOGRAPHERS	0	0	0	0	0	0
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	26	23	3	110	76	34
MATHEMATICIANS	14	11	3	90	64	26
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	12	12	0	20	12	8
LIFE SCIENTISTS, TOTAL	15	8	7	44	33	11
AGRICULTURAL SCIENTISTS	0	0	0	1	1	0
BIOLOGICAL SCIENTISTS	15	8	7	43	32	11
MEDICAL SCIENTISTS	0	0	0	0	0	0
PSYCHOLOGISTS	27	21	6	44	29	15
SOCIAL SCIENTISTS, TOTAL	60	49	11	122	94	28
ECONOMISTS	19	19	0	51	40	11
SOCIOLOGISTS	27	18	9	26	22	4
POLITICAL SCIENTISTS	13	12	1	25	19	6
OTHER SOCIAL SCIENTISTS	1	0	1	20	13	7

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-12. SCIENTISTS AND ENGINEERS EMPLOYED IN 2-YEAR INSTITUTIONS, BY FIELD, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

FIELD	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
TOTAL	39,355	24,650	14,705	2,357	1,533	824
ENGINEERS, TOTAL	4,814	2,903	1,911	230	165	65
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	138	81	57	10	9	1
CHEMICAL ENGINEERS	101	71	30	0	0	0
CIVIL ENGINEERS	834	510	324	45	33	12
ELECTRICAL ENGINEERS	1,461	871	590	52	35	17
MECHANICAL ENGINEERS	1,020	664	356	63	40	23
OTHER ENGINEERS	1,260	706	554	60	48	12
PHYSICAL SCIENTISTS, TOTAL	4,804	3,432	1,372	337	226	111
CHEMISTS	2,738	1,930	808	197	129	68
PHYSICISTS	1,559	1,197	362	113	82	31
OTHER PHYSICAL SCIENTISTS	507	305	202	27	15	12
ENVIRONMENTAL SCIENTISTS, TOTAL	915	646	269	36	29	7
EARTH SCIENTISTS	790	571	219	35	29	6
ATMOSPHERIC SCIENTISTS	49	22	27	0	0	0
OCEANOGRAPHERS	76	53	23	1	0	1
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	8,806	4,897	3,909	449	264	185
MATHEMATICIANS	6,919	3,989	2,930	377	230	147
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	1,887	908	979	72	34	38
LIFE SCIENTISTS, TOTAL	7,441	5,329	2,112	437	324	113
AGRICULTURAL SCIENTISTS	1,214	791	423	44	41	3
BIOLOGICAL SCIENTISTS	4,796	3,521	1,275	357	263	94
MEDICAL SCIENTISTS	1,431	1,017	414	36	20	16
PSYCHOLOGISTS	4,558	2,657	1,901	321	210	111
SOCIAL SCIENTISTS, TOTAL	8,017	4,786	3,231	547	315	232
ECONOMISTS	1,559	871	688	114	57	57
SOCIOLOGISTS	2,542	1,467	1,075	206	106	100
POLITICAL SCIENTISTS	1,620	1,112	508	110	71	39
OTHER SOCIAL SCIENTISTS	2,296	1,336	960	117	81	36

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-13. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY FIELD AND PRIMARY FUNCTION: JANUARY 1977 AND JANUARY 1978

FIELD	TOTAL		TEACHING		RESEARCH & DEVELOPMENT		OTHER	
	1977	1978	1977	1978	1977	1978	1977	1978
TOTAL	297,289	306,547	228,729	235,360	52,316	54,332	16,244	16,855
ENGINEERS, TOTAL	29,878	30,900	23,565	24,286	5,240	5,573	1,073	1,041
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	1,148	1,133	803	857	333	268	12	8
CHEMICAL ENGINEERS	1,929	2,004	1,471	1,527	393	418	65	59
CIVIL ENGINEERS	5,150	5,300	4,493	4,670	535	518	122	112
ELECTRICAL ENGINEERS	6,923	7,192	5,685	5,884	1,076	1,161	162	147
MECHANICAL ENGINEERS	5,491	5,660	4,692	4,813	620	672	179	175
OTHER ENGINEERS	9,237	9,611	6,421	6,535	2,283	2,536	533	540
PHYSICAL SCIENTISTS, TOTAL	32,078	32,794	24,915	25,348	6,567	6,862	596	584
CHEMISTS	17,103	17,647	13,716	14,073	3,030	3,247	357	327
PHYSICISTS	12,492	12,790	9,820	9,912	2,481	2,667	191	211
OTHER PHYSICAL SCIENTISTS	2,483	2,357	1,379	1,363	1,056	948	48	46
ENVIRONMENTAL SCIENTISTS, TOTAL	9,207	9,428	6,384	6,451	2,623	2,780	200	197
EARTH SCIENTISTS	6,925	6,940	5,532	5,440	1,240	1,363	153	137
ATMOSPHERIC SCIENTISTS	789	942	368	456	398	470	23	16
OCEANOGRAPHERS	1,493	1,546	484	555	985	947	24	44
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	31,962	32,947	29,376	30,187	1,585	1,732	1,001	1,028
MATHEMATICIANS	25,410	25,903	24,277	24,720	886	947	247	236
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	6,552	7,044	5,099	5,467	699	785	754	792
LIFE SCIENTISTS, TOTAL	117,360	122,522	76,337	80,040	31,153	31,879	9,870	10,603
AGRICULTURAL SCIENTISTS	14,172	14,925	5,365	6,144	4,787	4,555	4,020	4,226
BIOLOGICAL SCIENTISTS	42,711	43,358	29,279	29,669	12,249	12,524	1,183	1,165
MEDICAL SCIENTISTS	60,477	64,239	41,693	44,227	14,117	14,800	4,667	5,212
PSYCHOLOGISTS	23,707	23,720	20,493	20,422	1,492	1,648	1,722	1,650
SOCIAL SCIENTISTS, TOTAL	53,097	54,236	47,659	48,626	3,656	3,858	1,782	1,752
ECONOMISTS	13,840	13,970	12,027	12,132	1,262	1,304	551	534
SOCIOLOGISTS	15,474	15,316	14,373	14,192	766	834	335	290
POLITICAL SCIENTISTS	11,224	11,320	10,476	10,523	478	514	270	283
OTHER SOCIAL SCIENTISTS	12,559	13,630	10,783	11,779	1,150	1,206	626	645

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-14. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY FIELD AND PRIMARY FUNCTION: JANUARY 1977 AND JANUARY 1978

FIELD	TOTAL		TEACHING		RESEARCH & DEVELOPMENT		OTHER	
	1977	1978	1977	1978	1977	1978	1977	1978
TOTAL	235,859	241,099	175,811	178,799	45,731	47,157	14,317	15,143
ENGINEERS, TOTAL	23,937	24,601	18,535	18,864	4,415	4,758	987	979
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	971	965	675	721	288	236	8	8
CHEMICAL ENGINEERS	1,681	1,726	1,270	1,308	353	364	58	54
CIVIL ENGINEERS	4,114	4,192	3,524	3,623	477	465	113	104
ELECTRICAL ENGINEERS	5,467	5,594	4,376	4,431	948	1,027	143	136
MECHANICAL ENGINEERS	4,473	4,543	3,793	3,804	509	572	171	167
OTHER ENGINEERS	7,231	7,581	4,897	4,977	1,840	2,094	494	510
PHYSICAL SCIENTISTS, TOTAL	27,518	27,861	21,097	21,289	5,868	6,031	553	541
CHEMISTS	14,456	14,718	11,467	11,648	2,663	2,765	326	305
PHYSICISTS	11,070	11,271	8,622	8,667	2,263	2,411	185	193
OTHER PHYSICAL SCIENTISTS	1,992	1,872	1,008	974	942	855	42	43
ENVIRONMENTAL SCIENTISTS, TOTAL	7,960	8,109	5,414	5,462	2,359	2,469	187	178
EARTH SCIENTISTS	5,898	5,920	4,671	4,614	1,086	1,184	141	122
ATMOSPHERIC SCIENTISTS	694	801	320	375	352	411	22	15
OCEANOGRAPHERS	1,368	1,388	423	473	921	874	24	41
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	23,853	24,317	21,581	21,821	1,420	1,546	852	950
MATHEMATICIANS	19,271	19,533	18,268	18,476	790	847	213	210
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	4,582	4,784	3,313	3,345	630	699	639	740
LIFE SCIENTISTS, TOTAL	94,248	97,238	58,106	59,909	27,467	27,851	8,675	9,478
AGRICULTURAL SCIENTISTS	12,884	13,594	4,490	5,242	4,455	4,210	3,939	4,142
BIOLOGICAL SCIENTISTS	36,930	37,438	24,925	25,110	10,996	11,242	1,009	1,086
MEDICAL SCIENTISTS	44,434	46,206	28,691	29,557	12,016	12,399	3,727	4,250
PSYCHOLOGISTS	17,320	17,362	14,647	14,617	1,178	1,290	1,495	1,455
SOCIAL SCIENTISTS, TOTAL	41,023	41,611	36,431	36,837	3,024	3,212	1,568	1,562
ECONOMISTS	10,686	10,760	9,090	9,092	1,126	1,173	470	495
SOCIOLOGISTS	11,624	11,448	10,705	10,513	620	671	299	264
POLITICAL SCIENTISTS	9,022	9,028	8,436	8,401	381	415	205	212
OTHER SOCIAL SCIENTISTS	9,691	10,375	8,200	8,831	897	953	594	591

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-15. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY FIELD, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

FIELD	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
TOTAL	209,876	168,365	41,511	96,671	72,734	23,937
ENGINEERS, TOTAL	22,892	18,391	4,501	8,008	6,210	1,798
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	741	623	118	392	342	50
CHEMICAL ENGINEERS	1,361	1,178	183	643	548	95
CIVIL ENGINEERS	4,166	3,349	817	1,134	843	291
ELECTRICAL ENGINEERS	4,994	3,927	1,067	2,198	1,667	531
MECHANICAL ENGINEERS	4,128	3,366	762	1,532	1,177	355
OTHER ENGINEERS	7,502	5,948	1,554	2,109	1,633	476
PHYSICAL SCIENTISTS, TOTAL	21,736	18,314	3,422	11,058	9,547	1,511
CHEMISTS	11,653	9,573	2,080	5,994	5,145	849
PHYSICISTS	8,266	7,294	972	4,524	3,977	547
OTHER PHYSICAL SCIENTISTS	1,817	1,447	370	540	425	115
ENVIRONMENTAL SCIENTISTS, TOTAL	7,432	6,424	1,008	1,996	1,685	311
EARTH SCIENTISTS	5,485	4,722	763	1,455	1,198	257
ATMOSPHERIC SCIENTISTS	755	637	118	187	164	23
OCEANOGRAPHERS	1,192	1,065	127	354	323	31
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	24,566	18,197	6,369	8,381	6,120	2,261
MATHEMATICIANS	19,393	14,562	4,831	6,510	4,971	1,539
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	5,173	3,635	1,538	1,871	1,149	722
LIFE SCIENTISTS, TOTAL	79,473	65,160	14,313	43,049	32,078	10,971
AGRICULTURAL SCIENTISTS	14,209	12,944	1,265	716	650	66
BIOLOGICAL SCIENTISTS	28,520	24,670	3,850	14,838	12,768	2,070
MEDICAL SCIENTISTS	36,744	27,546	9,198	27,495	18,660	8,835
PSYCHOLOGISTS	16,288	12,299	3,989	7,432	5,063	2,369
SOCIAL SCIENTISTS, TOTAL	37,489	29,580	7,909	16,747	12,031	4,716
ECONOMISTS	9,111	7,308	1,803	4,859	3,452	1,407
SOCIOLOGISTS	10,521	8,081	2,440	4,795	3,367	1,428
POLITICAL SCIENTISTS	7,346	6,019	1,327	3,974	3,009	965
OTHER SOCIAL SCIENTISTS	10,511	8,172	2,339	3,119	2,203	916

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-16. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY TYPE OF INSTITUTION, STATUS, INSTITUTIONAL CONTROL, AND PRIMARY FUNCTION: JANUARY 1978

TYPE OF INSTITUTION AND STATUS	PUBLIC				PRIVATE			
	TOTAL	TEACHING	RESEARCH & DEVELOPMENT	OTHER	TOTAL	TEACHING	RESEARCH & DEVELOPMENT	OTHER
ALL INSTITUTIONS								
TOTAL	209,876	164,497	32,489	12,890	96,671	70,863	21,843	3,965
FULL TIME	168,365	128,781	27,802	11,782	72,734	50,018	19,355	3,361
PART TIME	41,511	35,716	4,687	1,108	23,937	20,845	2,488	604
INSTITUTIONS GRANTING:								
DOCTORATE IN S&E								
TOTAL	133,174	90,441	31,595	11,138	65,698	40,957	21,456	3,285
FULL TIME	113,155	76,046	26,975	10,134	50,594	28,784	19,025	2,785
PART TIME	20,019	14,395	4,620	1,004	15,104	12,173	2,431	500
MASTER'S IN S&E								
TOTAL	29,084	27,746	675	663	10,097	9,745	135	217
FULL TIME	23,271	22,043	620	608	6,288	6,000	117	171
PART TIME	5,813	5,703	55	55	3,809	3,745	18	46
BACHELOR'S IN S&E								
TOTAL	8,120	7,714	156	250	18,139	17,542	213	384
FULL TIME	7,174	6,784	146	244	14,039	13,531	178	330
PART TIME	946	930	10	6	4,100	4,011	35	54
OTHER DEGREES								
TOTAL	143	131	0	12	380	380	0	0
FULL TIME	115	103	0	12	280	280	0	0
PART TIME	28	28	0	0	100	100	0	0
2-YEAR INSTITUTIONS								
TOTAL	39,355	38,465	63	827	2,357	2,239	39	79
FULL TIME	24,650	23,805	61	784	1,533	1,423	35	75
PART TIME	14,705	14,660	2	43	824	816	4	4

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-17. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY TYPE OF INSTITUTION, STATUS, AND PRIMARY FUNCTION: JANUARY 1977 AND JANUARY 1978

TYPE OF INSTITUTION AND STATUS	TOTAL		TEACHING		RESEARCH & DEVELOPMENT		OTHER	
	1977	1978	1977	1978	1977	1978	1977	1978
ALL INSTITUTIONS								
TOTAL	297,289	306,547	228,729	235,360	52,316	54,332	16,244	16,855
FULL TIME	235,859	241,099	175,811	178,799	45,731	47,157	14,317	15,143
PART TIME	61,430	65,448	52,918	56,561	6,585	7,175	1,927	1,712
INSTITUTIONS GRANTING:								
DOCTORATE IN S&E								
TOTAL	192,325	198,872	127,237	131,398	51,240	53,051	13,848	14,423
FULL TIME	159,242	163,749	102,406	104,830	44,742	46,000	12,094	12,919
PART TIME	33,083	35,123	24,831	26,568	6,498	7,051	1,754	1,504
MASTER'S IN S&E								
TOTAL	34,790	39,181	33,382	37,491	667	810	741	880
FULL TIME	27,118	29,559	25,836	28,043	615	737	667	779
PART TIME	7,672	9,622	7,546	9,448	52	73	74	101
BACHELOR'S IN S&E								
TOTAL	27,701	26,259	26,707	25,256	327	369	667	634
FULL TIME	22,615	21,213	21,697	20,315	298	324	620	574
PART TIME	5,086	5,046	5,010	4,941	29	45	47	60
OTHER DEGREES								
TOTAL	607	523	586	511	0	0	21	12
FULL TIME	467	395	451	383	0	0	16	12
PART TIME	140	128	135	128	0	0	5	0
2-YEAR INSTITUTIONS								
TOTAL	41,866	41,712	40,817	40,704	82	102	967	906
FULL TIME	26,417	26,183	25,421	25,228	76	96	920	859
PART TIME	15,449	15,529	15,396	15,476	6	6	47	47

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-18. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY TYPE OF INSTITUTION, STATUS, AND FIELD: JANUARY 1978

TYPE OF INSTITUTION AND STATUS	TOTAL	ENGINEERS	PHYSICAL SCIENTISTS	ENVIRONMENTAL SCIENTISTS	MATH. AND COMPUTER SCIENTISTS	LIFE SCIENTISTS	PSYCHOLOGISTS	SOCIAL SCIENTISTS
ALL INSTITUTIONS								
TOTAL	306,547	30,900	32,794	9,428	32,947	122,522	23,720	54,236
FULL TIME	241,099	24,601	27,861	8,109	24,317	97,238	17,362	41,611
PART TIME	65,448	6,299	4,933	1,319	8,630	25,284	6,358	12,625
INSTITUTIONS GRANTING:								
DOCTORATE IN S&E								
TOTAL	198,872	21,643	18,131	6,341	13,370	102,408	9,889	27,090
FULL TIME	163,749	18,386	16,152	5,693	11,116	81,969	7,917	22,516
PART TIME	35,123	3,257	1,979	648	2,254	20,439	1,972	4,574
MASTER'S IN S&E								
TOTAL	39,181	2,693	5,283	1,447	6,003	7,248	5,561	10,946
FULL TIME	29,559	1,860	4,322	1,187	4,558	5,562	4,033	8,037
PART TIME	9,622	833	961	260	1,445	1,686	1,528	2,909
BACHELOR'S IN S&E								
TOTAL	26,259	1,509	4,187	677	4,183	4,929	3,320	7,454
FULL TIME	21,213	1,281	3,683	544	3,383	4,013	2,495	5,814
PART TIME	5,046	228	504	133	800	916	825	1,640
OTHER DEGREES								
TOTAL	523	11	52	12	136	59	71	182
FULL TIME	395	6	46	10	99	41	50	143
PART TIME	128	5	6	2	37	18	21	39
2-YEAR INSTITUTIONS								
TOTAL	41,712	5,044	5,141	951	9,255	7,878	4,879	8,564
FULL TIME	26,183	3,068	3,658	675	5,161	5,653	2,867	5,101
PART TIME	15,529	1,976	1,483	276	4,094	2,225	2,012	3,463

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-19. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY TYPE OF INSTITUTION, STATUS, AND LEVEL OF ATTAINMENT: JANUARY 1977 AND JANUARY 1978

TYPE OF INSTITUTION AND STATUS	TOTAL		PH. D. OR SC. D.		ED.D.		M.D., D.D.S. ETC.		MASTER'S		BACHELOR'S	
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
ALL INSTITUTIONS												
TOTAL	297,289	306,547	145,849	151,433	4,238	4,011	44,504	46,775	77,761	78,702	24,937	25,626
FULL TIME	235,859	241,099	130,987	135,163	3,569	3,319	30,833	31,586	53,908	54,194	16,562	16,837
PART TIME	61,430	65,448	14,862	16,270	669	692	13,671	15,189	23,853	24,508	8,375	8,789
INSTITUTIONS GRANTING:												
DOCTORATE IN S&E												
TOTAL	192,325	198,872	104,075	108,048	1,417	1,400	43,402	44,643	27,909	28,614	15,522	16,167
FULL TIME	159,242	163,749	94,469	97,694	1,194	1,123	30,223	30,619	21,089	21,694	12,267	12,619
PART TIME	33,083	35,123	9,606	10,354	223	277	13,179	14,024	6,820	6,920	3,255	3,548
MASTER'S IN S&E												
TOTAL	34,790	39,181	21,189	23,726	981	1,002	257	978	10,508	11,464	1,855	2,011
FULL TIME	27,118	29,559	18,920	20,833	881	905	152	368	6,627	6,830	536	623
PART TIME	7,672	9,622	2,269	2,893	100	97	105	610	3,881	4,634	1,317	1,388
BACHELOR'S IN S&E												
TOTAL	27,701	26,259	15,064	14,170	843	705	290	666	10,137	9,433	1,367	1,285
FULL TIME	22,615	21,213	13,722	12,822	762	618	123	333	7,231	6,761	777	679
PART TIME	5,086	5,046	1,342	1,348	81	87	167	333	2,906	2,672	590	606
OTHER DEGREES												
TOTAL	607	523	326	284	11	7	4	6	225	200	39	26
FULL TIME	467	395	283	247	8	7	0	0	156	126	20	15
PART TIME	140	128	45	37	3	0	4	6	69	74	19	11
2-YEAR INSTITUTIONS												
TOTAL	41,866	41,712	5,193	5,205	986	897	551	482	28,982	28,991	6,154	6,137
FULL TIME	26,417	26,183	3,593	3,567	724	666	335	266	18,805	18,783	2,960	2,901
PART TIME	15,449	15,529	1,600	1,638	262	231	216	216	10,177	10,208	3,194	3,236

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-20. FULL-TIME EQUIVALENT SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY TYPE OF INSTITUTION, STATUS, AND PRIMARY FUNCTION: JANUARY 1978

TYPE OF INSTITUTION AND STATUS	TOTAL	TEACHING	RESEARCH & DEVELOPMENT 1/	OTHER
ALL INSTITUTIONS				
TOTAL	266,251	191,286	57,123	17,842
FULL TIME	241,099	170,450	53,593	17,056
PART TIME	25,152	20,836	3,530	786
INSTITUTIONS GRANTING:				
DOCTORATE IN S&E				
TOTAL	178,117	107,463	55,313	15,341
FULL TIME	163,749	97,245	51,854	14,650
PART TIME	14,368	10,219	3,459	691
MASTER'S IN S&E				
TOTAL	33,142	30,978	1,188	976
FULL TIME	29,559	27,497	1,140	922
PART TIME	3,583	3,481	48	54
BACHELOR'S IN S&E				
TOTAL	23,115	21,961	534	620
FULL TIME	21,213	20,112	512	589
PART TIME	1,902	1,849	22	31
OTHER DEGREES				
TOTAL	456	441	0	15
FULL TIME	395	380	0	15
PART TIME	61	61	0	0
2-YEAR INSTITUTIONS				
TOTAL	31,421	30,443	88	890
FULL TIME	26,183	25,216	87	880
PART TIME	5,238	5,227	1	10

1/ FOR EXPLANATION OF DIFFERENCES BETWEEN DATA ON FTE INVOLVEMENT IN R&D ACTIVITIES SHOWN IN TABLES B-20, B-50, AND B-51, SEE PAGE 1 OF THE TECHNICAL NOTES.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-21. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY FIELD, INSTITUTIONAL CONTROL, AND PRIMARY FUNCTION: JANUARY 1978

FIELD	PUBLIC				PRIVATE			
	TOTAL	TEACHING	RESEARCH & DEVELOPMENT	OTHER	TOTAL	TEACHING	RESEARCH & DEVELOPMENT	OTHER
TOTAL	209,876	164,497	32,489	12,890	96,671	70,863	21,843	3,965
ENGINEERS, TOTAL	22,892	18,696	3,351	845	8,008	5,590	2,222	196
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	741	650	85	6	392	207	183	2
CHEMICAL ENGINEERS	1,361	1,066	252	43	643	461	166	16
CIVIL ENGINEERS	4,166	3,709	367	90	1,134	961	151	22
ELECTRICAL ENGINEERS	4,994	4,340	553	101	2,198	1,544	608	46
MECHANICAL ENGINEERS	4,128	3,619	368	141	1,532	1,194	304	34
OTHER ENGINEERS	7,502	5,312	1,726	464	2,109	1,223	810	76
PHYSICAL SCIENTISTS, TOTAL	21,736	17,473	3,847	416	11,058	7,875	3,015	168
CHEMISTS	11,653	9,673	1,753	227	5,994	4,400	1,494	100
PHYSICISTS	8,266	6,775	1,339	152	4,524	3,137	1,328	59
OTHER PHYSICAL SCIENTISTS	1,817	1,025	755	37	540	338	193	9
ENVIRONMENTAL SCIENTISTS, TOTAL	7,432	5,222	2,038	172	1,996	1,229	742	25
EARTH SCIENTISTS	5,485	4,370	990	125	1,455	1,070	373	12
ATMOSPHERIC SCIENTISTS	755	386	358	11	187	70	112	5
OCEANOGRAPHERS	1,192	466	690	36	354	89	257	8
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	24,566	22,837	940	789	8,381	7,350	792	239
MATHEMATICIANS	19,393	18,754	472	167	6,510	5,966	475	69
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	5,173	4,083	468	622	1,871	1,384	317	170
LIFE SCIENTISTS, TOTAL	79,473	52,835	18,492	8,146	43,049	27,205	13,387	2,457
AGRICULTURAL SCIENTISTS	14,209	5,801	4,310	4,098	716	343	245	128
BIOLOGICAL SCIENTISTS	28,520	20,660	6,977	883	14,638	9,009	5,547	282
MEDICAL SCIENTISTS	36,744	26,374	7,205	3,165	27,495	17,853	7,595	2,047
PSYCHOLOGISTS	16,288	14,003	1,056	1,229	7,432	6,419	592	421
SOCIAL SCIENTISTS, TOTAL	37,489	33,431	2,765	1,293	16,747	15,195	1,093	459
ECONOMISTS	9,111	7,652	1,033	426	4,859	4,480	271	108
SOCIOLOGISTS	10,521	9,740	598	183	4,795	4,452	236	107
POLITICAL SCIENTISTS	7,346	6,870	317	159	3,974	3,653	197	124
OTHER SOCIAL SCIENTISTS	10,511	9,169	817	525	3,119	2,610	389	120

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-22. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY FIELD, INSTITUTIONAL CONTROL, AND PRIMARY FUNCTION: JANUARY 1978

FIELD	PUBLIC				PRIVATE			
	TOTAL	TEACHING	RESEARCH & DEVELOPMENT	OTHER	TOTAL	TEACHING	RESEARCH & DEVELOPMENT	OTHER
TOTAL	168,365	128,781	27,802	11,782	72,734	50,018	19,355	3,361
ENGINEERS, TOTAL	18,391	14,763	2,812	816	6,210	4,101	1,946	163
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	623	544	73	6	342	177	163	2
CHEMICAL ENGINEERS	1,178	923	214	41	548	385	150	13
CIVIL ENGINEERS	3,349	2,927	333	89	843	696	132	15
ELECTRICAL ENGINEERS	3,927	3,329	502	96	1,667	1,102	525	40
MECHANICAL ENGINEERS	3,366	2,923	305	138	1,177	881	267	29
OTHER ENGINEERS	5,948	4,117	1,385	446	1,633	860	709	64
PHYSICAL SCIENTISTS, TOTAL	18,314	14,703	3,221	390	9,547	6,586	2,810	151
CHEMISTS	9,573	7,987	1,370	216	5,145	3,661	1,395	89
PHYSICISTS	7,294	5,984	1,171	139	3,977	2,683	1,240	54
OTHER PHYSICAL SCIENTISTS	1,447	732	680	35	425	242	175	8
ENVIRONMENTAL SCIENTISTS, TOTAL	6,424	4,495	1,772	157	1,665	967	697	21
EARTH SCIENTISTS	4,722	3,772	837	113	1,198	842	347	9
ATMOSPHERIC SCIENTISTS	637	321	306	10	164	54	105	5
OCEANOGRAPHERS	1,065	402	629	34	323	71	245	7
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	18,197	16,589	855	753	6,120	5,232	691	197
MATHEMATICIANS	14,562	13,982	428	152	4,971	4,494	419	58
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	3,635	2,607	427	601	1,149	738	272	139
LIFE SCIENTISTS, TOTAL	65,160	41,770	16,044	7,346	32,078	18,139	11,807	2,132
AGRICULTURAL SCIENTISTS	12,944	4,958	3,972	4,014	650	284	238	128
BIOLOGICAL SCIENTISTS	24,670	17,722	6,121	827	12,768	7,388	5,121	259
MEDICAL SCIENTISTS	27,546	19,090	5,951	2,505	18,660	10,467	6,448	1,745
PSYCHOLOGISTS	12,299	10,395	797	1,107	5,063	4,222	493	348
SOCIAL SCIENTISTS, TOTAL	29,580	26,066	2,301	1,213	12,031	10,771	911	349
ECONOMISTS	7,308	5,971	935	402	3,452	3,121	238	93
SOCIOLOGISTS	8,081	7,440	477	164	3,367	3,073	194	100
POLITICAL SCIENTISTS	6,019	5,620	253	146	3,009	2,781	162	66
OTHER SOCIAL SCIENTISTS	8,172	7,035	636	501	2,233	1,796	317	90

SOURCE: NATIONAL SCIENCE FOUNDATION

TABLE B-23. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY FIELD AND TYPE OF INSTITUTION: JANUARY 1977 AND JANUARY 1978

FIELD	TOTAL		INSTITUTIONS GRANTING:								2-YEAR INSTITUTIONS	
			DOCTORATE IN S&E		MASTER'S IN S&E		BACHELOR'S IN S&E		OTHER DEGREES			
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
TOTAL	297,289	306,547	192,325	198,872	34,790	39,181	27,701	26,259	607	523	41,866	41,712
ENGINEERS, TOTAL	29,878	30,900	20,973	21,643	2,316	2,693	1,507	1,509	7	11	5,075	5,044
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	1,148	1,133	875	830	58	48	67	107	0	0	148	148
CHEMICAL ENGINEERS	1,929	2,004	1,716	1,752	101	121	35	30	0	0	77	101
CIVIL ENGINEERS	5,150	5,300	3,506	3,589	474	591	264	241	0	0	906	879
ELECTRICAL ENGINEERS	6,923	7,192	4,309	4,530	660	758	391	386	7	5	1,556	1,513
MECHANICAL ENGINEERS	5,491	5,660	3,550	3,626	544	619	313	327	0	5	1,084	1,083
OTHER ENGINEERS	9,237	9,611	7,017	7,316	479	556	437	418	0	1	1,304	1,320
PHYSICAL SCIENTISTS, TOTAL	32,078	32,794	17,706	18,131	4,738	5,283	4,477	4,187	60	52	5,097	5,141
CHEMISTS	17,103	17,647	8,698	9,051	2,702	3,035	2,762	2,602	30	24	2,911	2,935
PHYSICISTS	12,492	12,790	7,443	7,637	1,799	1,997	1,566	1,462	21	22	1,663	1,672
OTHER PHYSICAL SCIENTISTS	2,483	2,357	1,565	1,443	237	251	149	123	9	6	523	534
ENVIRONMENTAL SCIENTISTS, TOTAL	9,207	9,428	6,061	6,341	1,418	1,447	767	677	15	12	946	951
EARTH SCIENTISTS	6,925	6,940	4,076	4,197	1,305	1,299	686	607	15	12	843	825
ATMOSPHERIC SCIENTISTS	789	942	675	800	49	70	28	23	0	0	37	49
OCEANOGRAPHERS	1,493	1,546	1,310	1,344	64	78	53	47	0	0	66	77
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	31,962	32,947	12,865	13,370	5,346	6,003	4,455	4,183	140	136	9,156	9,255
MATHEMATICIANS	25,410	25,903	9,812	10,131	4,364	4,862	3,789	3,510	104	104	7,341	7,296
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	6,552	7,044	3,053	3,239	982	1,141	666	673	36	32	1,815	1,959
LIFE SCIENTISTS, TOTAL	117,360	122,522	98,770	102,408	5,838	7,248	4,647	4,929	72	59	8,033	7,878
AGRICULTURAL SCIENTISTS	14,172	14,925	11,889	12,640	761	779	212	247	0	1	1,310	1,258
BIOLOGICAL SCIENTISTS	42,711	43,358	28,956	29,307	4,414	4,993	4,028	3,847	72	58	5,241	5,153
MEDICAL SCIENTISTS	60,477	64,239	57,925	60,461	663	1,476	407	835	0	0	1,482	1,467
PSYCHOLOGISTS	23,707	23,720	9,779	9,889	5,232	5,561	3,649	3,320	95	71	4,952	4,879
SOCIAL SCIENTISTS, TOTAL	53,097	54,236	26,171	27,090	9,902	10,946	8,199	7,454	218	182	8,607	8,564
ECONOMISTS	13,840	13,970	7,262	7,445	2,607	2,809	2,212	1,973	85	70	1,674	1,673
SOCIOLOGISTS	15,474	15,316	6,508	6,487	3,091	3,404	2,920	2,624	65	53	2,890	2,748
POLITICAL SCIENTISTS	11,224	11,320	5,190	5,269	2,219	2,476	1,979	1,807	48	38	1,788	1,730
OTHER SOCIAL SCIENTISTS	12,559	13,630	7,211	7,889	1,985	2,257	1,088	1,050	20	21	2,255	2,413

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-24. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY FIELD AND TYPE OF INSTITUTION: JANUARY 1977 AND JANUARY 1978

FIELD	TOTAL		INSTITUTIONS GRANTING:								2-YEAR INSTITUTIONS	
			DOCTORATE IN S&E		MASTER'S IN S&E		BACHELOR'S IN S&E		OTHER DEGREES			
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
TOTAL	235,859	241,099	159,242	163,749	27,118	29,559	22,615	21,213	467	395	26,417	26,183
ENGINEERS, TOTAL	23,937	24,601	17,778	18,386	1,709	1,860	1,323	1,281	5	6	3,122	3,068
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	971	965	781	748	41	30	57	97	0	0	92	90
CHEMICAL ENGINEERS	1,681	1,726	1,500	1,537	85	93	34	25	0	0	62	71
CIVIL ENGINEERS	4,114	4,192	2,969	3,043	339	411	220	195	0	0	586	543
ELECTRICAL ENGINEERS	5,467	5,594	3,698	3,841	489	513	348	331	5	3	927	906
MECHANICAL ENGINEERS	4,473	4,543	3,076	3,115	403	444	282	277	0	3	712	704
OTHER ENGINEERS	7,231	7,561	5,754	6,102	352	369	382	356	0	0	743	754
PHYSICAL SCIENTISTS, TOTAL	27,518	27,861	15,884	16,152	3,951	4,322	3,965	3,683	49	46	3,669	3,658
CHEMISTS	14,456	14,718	7,681	7,913	2,253	2,453	2,439	2,271	25	22	2,058	2,059
PHYSICISTS	11,070	11,271	6,813	6,978	1,535	1,690	1,408	1,305	18	19	1,296	1,279
OTHER PHYSICAL SCIENTISTS	1,992	1,872	1,390	1,261	163	179	118	107	6	5	315	320
ENVIRONMENTAL SCIENTISTS, TOTAL	7,960	8,109	5,470	5,693	1,172	1,187	625	544	11	10	682	675
EARTH SCIENTISTS	5,898	5,920	3,636	3,740	1,076	1,082	565	488	11	10	610	600
ATMOSPHERIC SCIENTISTS	694	801	610	712	41	52	19	15	0	0	24	22
OCEANOGRAPHERS	1,368	1,388	1,224	1,241	55	53	41	41	0	0	48	53
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	23,853	24,317	10,829	11,116	4,156	4,558	3,595	3,383	103	99	5,170	5,161
MATHEMATICIANS	19,271	19,533	8,392	8,562	3,465	3,791	3,104	2,886	71	75	4,239	4,219
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	4,582	4,784	2,437	2,554	691	767	491	497	32	24	931	942
LIFE SCIENTISTS, TOTAL	94,248	97,238	79,651	81,969	4,876	5,562	3,945	4,013	48	41	5,728	5,653
AGRICULTURAL SCIENTISTS	12,884	13,594	11,135	11,874	695	664	191	223	0	1	863	832
BIOLOGICAL SCIENTISTS	36,930	37,438	25,827	26,283	3,695	4,025	3,511	3,306	48	40	3,849	3,784
MEDICAL SCIENTISTS	44,434	46,206	42,689	43,812	486	873	243	484	0	0	1,016	1,037
PSYCHOLOGISTS	17,320	17,362	7,855	7,917	3,762	4,033	2,733	2,495	69	50	2,901	2,867
SOCIAL SCIENTISTS, TOTAL	41,023	41,611	21,775	22,516	7,492	8,037	6,429	5,814	182	143	5,145	5,101
ECONOMISTS	10,686	10,760	6,141	6,293	1,822	1,933	1,725	1,547	72	59	926	928
SOCIOLOGISTS	11,624	11,448	5,364	5,372	2,382	2,498	2,195	1,965	55	40	1,628	1,573
POLITICAL SCIENTISTS	9,022	9,028	4,298	4,387	1,815	1,935	1,656	1,492	40	31	1,213	1,183
OTHER SOCIAL SCIENTISTS	9,691	10,375	5,972	6,464	1,473	1,671	853	810	15	13	1,378	1,417

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-25. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY PRIMARY FUNCTION, TYPE OF INSTITUTION, AND LEVEL OF ATTAINMENT: JANUARY 1977 AND JANUARY 1978

PRIMARY FUNCTION AND TYPE OF INSTITUTION	TOTAL		PH. D. OR SC. D.		ED.D.		M.D., D.D.S. ETC.		MASTER'S		BACHELOR'S	
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
ALL FUNCTIONS												
TOTAL	297,289	[illegible]	145,849	151,433	4,238	4,011	44,504	46,775	77,761	78,702	24,937	25,626
DOCTORATE IN S&E	192,325	198,872	104,075	108,048	1,417	1,400	43,402	44,643	27,909	28,614	15,522	16,167
MASTER'S IN S&E	34,790	39,181	21,189	23,726	981	1,002	257	978	10,508	11,464	1,855	2,011
BACHELOR'S IN S&E	27,701	26,259	15,064	14,170	843	705	290	666	10,137	9,433	1,367	1,285
OTHER DEGREE GRANTING	607	523	328	284	11	7	4	6	225	200	39	26
2-YEAR	41,866	41,712	5,193	5,205	986	897	551	482	28,982	28,991	6,154	6,137
TEACHING												
TOTAL	228,729	235,360	112,958	117,140	3,709	3,530	32,441	34,360	65,755	66,213	13,866	14,117
DOCTORATE IN S&E	127,237	131,398	72,582	75,316	1,058	1,054	31,403	32,330	17,319	17,563	4,875	5,135
MASTER'S IN S&E	33,382	37,491	20,406	22,757	906	940	234	936	10,125	11,064	1,711	1,794
BACHELOR'S IN S&E	26,707	25,256	14,624	13,742	815	684	274	624	9,768	9,042	1,226	1,164
OTHER DEGREE GRANTING	586	511	321	278	10	7	4	6	222	200	29	20
2-YEAR	40,817	40,704	5,025	5,047	920	845	526	464	28,321	28,344	6,025	6,004
RESEARCH AND DEVELOPMENT												
TOTAL	52,316	54,332	28,044	29,159	261	239	8,536	8,663	7,544	7,909	7,931	8,362
DOCTORATE IN S&E	51,240	53,051	27,378	28,384	232	212	8,516	8,626	7,302	7,627	7,812	8,202
MASTER'S IN S&E	667	810	443	528	20	21	9	17	131	148	64	96
BACHELOR'S IN S&E	327	369	201	215	6	5	5	14	79	91	36	44
OTHER DEGREE GRANTING	0	0	0	0	0	0	0	0	0	0	0	0
2-YEAR	82	102	22	32	3	1	6	6	32	43	19	20
OTHER												
TOTAL	16,244	16,855	4,847	5,134	268	242	3,527	3,752	4,462	4,580	3,140	3,147
DOCTORATE IN S&E	13,848	14,423	4,115	4,348	127	134	3,483	3,687	3,288	3,424	2,835	2,830
MASTER'S IN S&E	741	880	340	441	55	41	14	25	252	252	80	121
BACHELOR'S IN S&E	667	634	239	213	22	16	11	28	290	300	105	77
OTHER DEGREE GRANTING	21	12	7	6	1	0	0	0	3	0	10	6
2-YEAR	967	906	146	126	63	51	19	12	629	604	110	113

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-26. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY PRIMARY FUNCTION, TYPE OF INSTITUTION, AND LEVEL OF ATTAINMENT: JANUARY 1977 AND JANUARY 1978

PRIMARY FUNCTION AND TYPE OF INSTITUTION	TOTAL		PH. D. OR SC. D.		ED.D.		M.D., D.D.S. ETC.		MASTER'S		BACHELOR'S	
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
ALL FUNCTIONS												
TOTAL	235,859	241,099	130,987	135,163	3,569	3,319	30,833	31,586	53,908	54,194	16,562	16,837
DOCTORATE IN S&E	159,242	163,749	94,469	97,694	1,194	1,123	30,223	30,619	21,089	21,694	12,267	12,619
MASTER'S IN S&E	27,118	29,559	18,920	20,833	881	905	152	368	6,627	6,830	538	623
BACHELOR'S IN S&E	22,615	21,213	13,722	12,822	762	618	123	333	7,231	6,761	777	679
OTHER DEGREE GRANTING	467	395	283	247	8	7	0	0	156	126	20	15
2-YEAR	26,417	26,183	3,593	3,567	724	666	335	266	18,805	18,783	2,960	2,901
TEACHING												
TOTAL	175,811	178,799	101,182	104,174	3,093	2,902	21,052	21,471	43,572	43,443	6,912	6,809
DOCTORATE IN S&E	102,406	104,830	65,986	68,154	880	835	20,495	20,577	12,086	12,282	2,959	2,982
MASTER'S IN S&E	25,836	28,043	18,174	19,939	813	849	134	341	6,288	6,473	427	441
BACHELOR'S IN S&E	21,697	20,315	13,316	12,423	735	597	111	303	6,888	6,413	647	579
OTHER DEGREE GRANTING	451	383	276	241	7	7	0	0	155	126	13	9
2-YEAR	25,421	25,228	3,430	3,417	658	614	312	250	18,155	18,149	2,866	2,798
RESEARCH AND DEVELOPMENT												
TOTAL	45,731	47,157	25,427	26,264	225	193	7,066	7,141	6,257	6,491	6,756	7,068
DOCTORATE IN S&E	44,742	46,000	24,799	25,552	197	167	7,049	7,107	6,035	6,236	6,662	6,938
MASTER'S IN S&E	615	737	427	484	19	20	7	16	117	141	45	76
BACHELOR'S IN S&E	298	324	182	200	6	5	4	12	76	73	30	34
OTHER DEGREE GRANTING	0	0	0	0	0	0	0	0	0	0	0	0
2-YEAR	76	96	19	28	3	1	6	6	29	41	19	20
OTHER												
TOTAL	14,317	15,143	4,378	4,725	251	224	2,715	2,974	4,079	4,260	2,894	2,960
DOCTORATE IN S&E	12,094	12,919	3,684	3,988	117	121	2,679	2,935	2,968	3,176	2,646	2,699
MASTER'S IN S&E	667	779	319	410	49	36	11	11	222	216	66	106
BACHELOR'S IN S&E	620	574	224	199	21	16	8	18	267	275	100	86
OTHER DEGREE GRANTING	16	12	7	6	1	0	0	0	1	0	7	6
2-YEAR	920	859	144	122	63	51	17	10	621	593	75	83

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-27. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES BY FIELD AND SEX: JANUARY 1978

FIELD	TOTAL	MEN			WOMEN		
		NUMBER	PERCENT DISTRIBUTION	PERCENT OF TOTAL	NUMBER	PERCENT DISTRIBUTION	PERCENT OF TOTAL
TOTAL	241,099	202,413	100.0%	84.0%	38,686	100.0%	16.0%
ENGINEERS, TOTAL	24,601	24,008	11.9	97.6	593	1.5	2.4
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	965	947	.5	98.1	18	.0	1.9
CHEMICAL ENGINEERS	1,726	1,694	.8	98.1	32	.1	1.9
CIVIL ENGINEERS	4,192	4,067	2.0	97.0	125	.3	3.0
ELECTRICAL ENGINEERS	5,594	5,502	2.7	98.4	92	.2	1.6
MECHANICAL ENGINEERS	4,543	4,482	2.2	98.7	61	.2	1.3
OTHER ENGINEERS	7,581	7,316	3.6	96.5	265	.7	3.5
PHYSICAL SCIENTISTS, TOTAL	27,861	25,418	12.6	91.2	2,443	6.3	8.8
CHEMISTS	14,711	12,987	6.4	88.3	1,724	4.5	11.7
PHYSICISTS	11,272	10,794	5.3	95.8	478	1.2	4.2
OTHER PHYSICAL SCIENTISTS	1,878	1,637	.8	87.2	241	.6	12.8
ENVIRONMENTAL SCIENTISTS, TOTAL	8,109	7,549	3.7	93.1	560	1.4	6.9
EARTH SCIENTISTS	5,920	5,516	2.7	93.2	404	1.0	6.8
ATMOSPHERIC SCIENTISTS	801	766	.4	95.6	35	.1	4.4
OCEANOGRAPHERS	1,388	1,267	.6	91.3	121	.3	8.7
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	24,317	20,854	10.3	85.8	3,463	9.0	14.2
MATHEMATICIANS	19,545	16,640	8.2	85.1	2,905	7.5	14.9
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	4,772	4,214	2.1	88.3	558	1.4	11.7
LIFE SCIENTISTS, TOTAL	97,238	77,467	38.3	79.7	19,771	51.1	20.3
AGRICULTURAL SCIENTISTS	13,594	12,375	6.1	91.0	1,219	3.2	9.0
BIOLOGICAL SCIENTISTS	37,442	29,675	14.7	79.3	7,767	20.1	20.7
MEDICAL SCIENTISTS	46,202	35,417	17.5	76.7	10,785	27.9	23.3
PSYCHOLOGISTS	17,362	13,061	6.5	75.2	4,301	11.1	24.8
SOCIAL SCIENTISTS, TOTAL	41,611	34,056	16.8	81.8	7,555	19.5	18.2
ECONOMISTS	10,761	9,797	4.8	91.0	964	2.5	9.0
SOCIOLOGISTS	11,449	8,430	4.2	73.6	3,019	7.8	26.4
POLITICAL SCIENTISTS	9,026	7,950	3.9	88.1	1,076	2.8	11.9
OTHER SOCIAL SCIENTISTS	10,375	7,879	3.9	75.9	2,496	6.5	24.1

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-28. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES,
BY TYPE AND CONTROL OF INSTITUTION AND SEX: JANUARY 1978

TYPE OF INSTITUTION AND CONTROL	TOTAL	MEN			WOMEN		
		NUMBER	PERCENT DISTRIBUTION	PERCENT OF TOTAL	NUMBER	PERCENT DISTRIBUTION	PERCENT OF TOTAL
ALL INSTITUTIONS							
TOTAL	241,099	202,413	100.0%	84.0%	38,686	100.0%	16.0%
PUBLIC	168,365	142,221	70.3	84.5	26,144	67.6	15.5
PRIVATE	72,734	60,192	29.7	82.8	12,542	32.4	17.2
INSTITUTIONS GRANTING:							
DOCTORATE IN S&E							
TOTAL	163,749	138,552	68.5	84.6	25,197	65.1	15.4
PUBLIC	113,155	96,253	47.6	85.1	16,902	43.7	14.9
PRIVATE	50,594	42,299	20.9	83.6	8,295	21.4	16.4
MASTER'S IN S&E							
TOTAL	29,559	25,161	12.4	85.1	4,398	11.4	14.9
PUBLIC	23,271	20,009	9.9	86.0	3,262	8.4	14.0
PRIVATE	6,288	5,152	2.5	81.9	1,136	2.9	18.1
BACHELOR'S IN S&E							
TOTAL	21,213	17,610	8.7	83.0	3,603	9.3	17.0
PUBLIC	7,174	6,264	3.1	87.3	910	2.4	12.7
PRIVATE	14,039	11,346	5.6	80.8	2,693	7.0	19.2
OTHER DEGREES							
TOTAL	395	336	.2	85.1	59	.2	14.9
PUBLIC	115	91	.0	79.1	24	.1	20.9
PRIVATE	280	245	.1	87.5	35	.1	12.5
2-YEAR INSTITUTIONS							
TOTAL	26,183	20,754	10.3	79.3	5,429	14.0	20.7
PUBLIC	24,650	19,604	9.7	79.5	5,046	13.0	20.5
PRIVATE	1,533	1,150	.6	75.0	383	1.0	25.0

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-29. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED AT 50 LEADING UNIVERSITIES AND COLLEGES: JANUARY 1977 AND JANUARY 1978

INSTITUTIONS RANKED ON 1978 NUMBER	1978 NUMBER	1978 PERCENT DISTRIBUTION	1977 NUMBER	1977 PERCENT DISTRIBUTION
TOTAL, ALL INSTITUTIONS	241,099	100.00	235,859	100.00
1 HARVARD UNIVERSITY	3,385	1.40	3,285	1.39
2 UNIV OF WISCONSIN-MADISON	2,965	1.23	3,185	1.35
3 UNIVERSITY OF MINNESOTA	2,901	1.20	2,890	1.23
4 UNIVERSITY OF MICHIGAN	2,728	1.13	2,677	1.14
5 CORNELL UNIVERSITY	2,585	1.07	2,312	0.98
6 OHIO STATE UNIVERSITY	2,361	0.98	2,375	1.01
7 TEXAS A & M UNIVERSITY	2,072	0.86	2,012	0.85
8 UNIV ILLINOIS URBANA	2,045	0.85	2,074	0.88
9 MASS INST OF TECHNOLOGY	2,032	0.84	1,996	0.85
10 JOHNS HOPKINS UNIVERSITY	1,991	0.83	1,990	0.84
TOTAL 1ST 10 INSTS.	25,066	10.40	24,796	10.52
11 UNIVERSITY OF FLORIDA	1,988	0.82	2,051[1]	0.87
12 LOUISIANA ST UNIV SYSTEM	1,978	0.82	1,885	0.80
13 UNIVERSITY OF WASHINGTON	1,964	0.81	1,947	0.83
14 PENNSYLVANIA STATE UNIV	1,903	0.79	1,873	0.79
15 UNIV OF TEXAS AT AUSTIN	1,680	0.70	1,670	0.71
16 PURDUE UNIV ALL CAMPUSES	1,626	0.67	1,581	0.67
17 YALE UNIVERSITY	1,601	0.66	1,561	0.66
18 MICHIGAN STATE UNIVERSITY	1,601	0.66	1,575	0.67
19 STANFORD UNIVERSITY	1,584	0.66	1,493	0.63
20 COLUMBIA UNIV MAIN DIV	1,567	0.65	1,468	0.62
TOTAL 1ST 20 INSTS.	42,558	17.65	41,900	17.78
21 N C STATE UNIV AT RALEIGH	1,563	0.65	1,254	0.53
22 UNIVERSITY OF ARIZONA	1,499	0.62	1,259	0.53
23 UNIV OF STHRN CALIFORNIA	1,456	0.60	1,217	0.52
24 U OF CAL LOS ANGELES	1,386	0.57	1,550	0.66
25 RUTGERS THE STATE UNIV	1,356	0.56	1,288	0.55
26 DUKE UNIVERSITY	1,349	0.56	1,281	0.54
27 UNIVERSITY OF IOWA	1,340	0.56	1,300	0.55
28 UNIVERSITY OF CHICAGO	1,303	0.54	1,313	0.56
29 NEW YORK UNIVERSITY	1,289	0.53	1,230	0.52
30 UNIVERSITY OF COLORADO	1,254	0.52	1,238E	0.51
TOTAL 1ST 30 INSTS.	56,363	23.38	54,800	23.26
31 CASE WESTERN RESERVE UNIV	1,261	0.52	1,222	0.52
32 U OF CAL BERKELEY	1,260	0.52	1,364	0.58
33 UNIV OF MD COLLEGE PARK	1,239	0.51	1,229	0.52
34 UNIVERSITY OF UTAH	1,238	0.51	780	0.33
35 UNIV OF KENTUCKY ALL CAM	1,225	0.51	1,119	0.47
36 WASHINGTON UNIVERSITY	1,164	0.48	1,118	0.47
37 WAYNE STATE UNIVERSITY	1,153	0.48	1,412[1]	0.60
38 UNIVERSITY OF GEORGIA	1,151	0.48	1,035	0.44
39 IOWA ST U OF SCI & TECH	1,147	0.48	1,124	0.48
40 UNIV OF MISSOURI COLUMBIA	1,140	0.47	1,165	0.49
TOTAL 1ST 40 INSTS.	68,341	28.35	66,368	28.17
41 U OF CAL DAVIS	1,113	0.46	1,107	0.47
42 UNIVERSITY OF CONNECTICUT	1,097	0.45	1,066	0.45
43 UNIV OF NC AT CHAPEL HILL	1,092	0.45	1,051	0.45
44 OREGON STATE UNIVERSITY	1,066	0.44	1,026	0.44
45 UNIV OF HAWAII-MANOA	1,028	0.43	954	0.40
46 UNIVERSITY OF MIAMI	1,021	0.42	794	0.34
47 WEST VIRGINIA UNIVERSITY	1,009	0.42	992	0.42
48 TEMPLE UNIVERSITY	1,000	0.41	1,021	0.43
49 UNIVERSITY OF ROCHESTER	1,000	0.41	1,045	0.44
50 GEORGIA INSTITUTE OF TECH	997	0.41	896	0.38
TOTAL 1ST 50 INSTS.	78,764	32.67	76,320	32.39

NOTE: TABLE DOES NOT INCLUDE ANY LEADING INSTITUTION THAT (1) REQUIRED NATIONAL SCIENCE FOUNDATION ESTIMATES IN 1978, OR (2) REQUESTED THAT ITS DATA BE HELD CONFIDENTIAL.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-30. FULL-TIME SCIENTISTS AND ENGINEERS AT 50 LEADING PUBLIC UNIVERSITIES
IN EMPLOYMENT OF SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

	TOTAL, ALL FIELDS		ENGINEERS		PHYSICAL SCIENTISTS		ENVIRON-MENTAL SCIENTISTS		MATH. AND COMPUTER SCIENTISTS		LIFE SCIENTISTS		PSYCHOLOGISTS		SOCIAL SCIENTISTS	
INSTITUTIONAL RANKING	GRAND TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN
TOTAL, ALL PUBLIC INSTITUTIONS	168365	26144	18391	406	18314	1501	6424	406	18197	2579	65160	12965	12299	3001	29580	5286
1 UNIV OF WISCONSIN-MADISON	2965	714	281	16	230	29	195	35	188	9	1573	472	159	62	339	91
2 UNIVERSITY OF MINNESOTA	2901	457	184	0	153	8	62	3	139	11	1718	315	128	25	517	95
3 UNIVERSITY OF MICHIGAN	2728	746	368	24	260	37	95	4	110	11	1434	537	151	52	310	81
4 OHIO STATE UNIVERSITY	2361	469	280	10	156	8	50	2	114	6	1434	398	48	6	279	39
5 TEXAS A & M UNIVERSITY	2072	98	346	6	97	4	77	3	109	6	1032	21	41	7	370	51
6 UNIV ILLINOIS URBANA	2046	453	371	81	263	46	65	15	202	52	608	132	173	44	364	83
7 UNIVERSITY OF FLORIDA	1988	305	212	2	65	0	27	0	65	4	1478	280	41	8	100	11
8 LOUISIANA ST UNIV SYSTEM	1978	463	107	0	96	2	49	4	117	21	1440	408	41	8	128	20
9 UNIVERSITY OF WASHINGTON	1964	341	289	6	114	5	171	11	78	4	1074	273	47	13	191	29
10 PENNSYLVANIA STATE UNIV	1903	159	448	8	198	9	88	4	195	27	697	66	73	19	204	26
TOTAL 1ST 10 INSTS.	22906	4205	2886	153	1632	148	879	81	1317	151	12488	2902	902	244	2802	526
11 UNIV OF TEXAS AT AUSTIN	1680	343	239	27	399	33	144	25	154	18	214	68	139	51	391	121
12 PURDUE UNIV ALL CAMPUSES	1626	174	331	3	202	10	25	1	192	18	582	110	90	20	204	12
13 MICHIGAN STATE UNIVERSITY	1601	207	116	0	177	7	35	0	129	12	756	132	112	22	276	34
14 N C STATE UNIV AT RALEIGH	1563	122	287	5	74	6	23	2	127	8	851	66	22	7	179	28
15 UNIVERSITY OF ARIZONA	1499	215	158	0	241	10	105	7	113	15	589	128	78	19	215	36
16 U OF CAL LOS ANGELES	1386	204	149	3	127	4	43	2	67	3	744	148	60	12	196	32
17 RUTGERS THE STATE UNIV	1356	257	95	1	147	18	45	2	180	27	371	64	122	32	396	113
18 UNIVERSITY OF IOWA	1340	196	68	0	70	2	14	0	61	8	927	163	33	5	167	18
19 UNIVERSITY OF COLORADO	1264	99	135	2	208	5	39	0	80	7	579	60	63	7	160	18
20 U OF CAL BERKELEY	1260	158	271	4	173	9	28	2	76	4	443	91	44	11	225	37
TOTAL 1ST 20 INSTS.	37481	6180	4735	198	3450	252	1380	122	2496	271	18544	3932	1665	430	5211	975
21 UNIV OF MD COLLEGE PARK	1239	173	163	6	268	15	15	4	137	15	361	69	78	23	217	41
22 UNIVERSITY OF UTAH	1238	195	132	5	125	4	81	7	71	4	654	149	40	4	135	22
23 UNIV OF KENTUCKY ALL CAM	1225	130	148	0	112	16	54	4	119	19	528	56	67	19	197	16
24 UNIVERSITY OF GEORGIA	1151	76	29	0	82	2	53	4	70	9	647	25	102	18	168	18
25 IOWA ST U OF SCI & TECH	1147	120	310	6	81	4	45	1	90	5	418	46	40	8	163	50
26 UNIV OF MISSOURI COLUMBIA	1140	103	120	0	74	4	19	0	50	2	717	83	30	5	130	9
27 U OF CAL DAVIS	1113	103	124	4	63	2	19	0	37	3	715	67	15	2	140	25
28 UNIVERSITY OF CONNECTICUT	1097	246	80	0	91	8	23	1	52	5	519	134	113	33	219	65
29 UNIV OF NC AT CHAPEL HILL	1092	119	0	0	122	9	58	2	80	7	685	82	43	9	104	10
30 OREGON STATE UNIVERSITY	1066	127	141	1	97	4	124	6	74	9	501	77	21	9	108	21
TOTAL 1ST 30 INSTS.	48989	7572	5982	220	4565	320	1871	151	3276	349	24289	4720	2214	560	6792	1252
31 UNIV OF HAWAII-MANOA	1028	171	74	3	92	9	83	8	44	2	467	116	38	4	230	29
32 WEST VIRGINIA UNIVERSITY	1009	161	101	2	35	1	16	1	47	11	341	42	23	3	446	101
33 TEMPLE UNIVERSITY	1000	171	22	2	46	2	19	3	83	10	557	83	116	32	157	39
34 GEORGIA INSTITUTE OF TECH	997	52	583	16	165	8	14	0	93	10	20	2	11	4	111	12
35 VA POLYTECH INST & ST U	972	50	249	6	69	1	45	3	108	13	369	12	25	4	107	11
36 UNIV ALABAMA BIRMINGHAM	951	154	14	2	28	1	4	0	45	9	756	121	68	17	36	4
37 U OF CAL SAN DIEGO	933	79	54	0	150	6	197	11	35	1	405	43	17	1	75	17
38 U OF CAL SAN FRANCISCO	933	237	0	0	33	2	0	0	0	0	885	227	0	0	15	8
39 VIRGINIA COMMONWLTH UNIV	907	107	0	0	16	0	0	0	46	2	671	65	33	6	141	34
40 COLORADO STATE UNIVERSITY	875	42	144	1	55	0	48	0	72	4	449	29	26	1	81	7
TOTAL 1ST 40 INSTS.	58594	8796	7223	252	5254	350	2297	177	3849	411	29209	5460	2571	632	8191	1514
41 KANSAS ST UNIVERSITY	832	108	117	1	50	0	13	0	48	2	503	97	16	1	85	7
42 U OF ILL MEDICAL CENTER	820	273	0	0	16	2	0	0	0	0	791	268	13	3	0	0
43 UNIVERSITY OF CINCINNATI	814	122	106	1	51	2	14	1	33	1	534	110	24	1	52	6
44 INDIANA U-PURDUE U INDPLS	802	205	40	3	34	3	4	0	30	3	622	179	32	6	40	11
45 AUBURN UNIVERSITY	790	57	170	1	51	4	13	1	58	6	357	27	20	4	121	14
46 U TEX CAN CTR MDA H & TI	785	401	11	0	53	21	0	0	39	14	682	366	0	0	0	0
47 UNIVERSITY OF ARKANSAS	784	171	73	0	44	2	10	0	24	2	413	31	19	2	201	134
48 CLEMSON UNIVERSITY	783	39	134	3	59	2	6	0	75	9	415	16	15	3	79	6
49 UNIV OF NEBRASKA - LNCLN	744	27	130	0	86	7	23	0	57	6	357	8	24	1	67	5
50 U TENNESSEE KNOXVILLE	718	126	157	2	102	5	25	0	75	11	163	69	52	9	144	30
TOTAL 1ST 50 INSTS.	66466	10325	8161	263	5800	398	2405	179	4288	465	34046	6631	2786	662	8980	1727
TOTAL ALL OTHER INSTS.	101899	15819	10230	143	12514	1103	4019	227	13909	2114	31114	6334	9513	2339	20600	3559

NOTE: TABLE DOES NOT INCLUDE ANY LEADING INSTITUTION THAT (1) REQUIRED NATIONAL SCIENCE FOUNDATION ESTIMATES IN 1978, OR (2) REQUESTED THAT ITS DATA BE HELD CONFIDENTIAL.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-31. FULL-TIME SCIENTISTS AND ENGINEERS AT 50 LEADING PRIVATE UNIVERSITIES IN EMPLOYMENT OF SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

	TOTAL, ALL FIELDS		ENGINEERS		PHYSICAL SCIENTISTS		ENVIRON-MENTAL SCIENTISTS		MATH. AND COMPUTER SCIENTISTS		LIFE SCIENTISTS		PSYCHOLOGISTS		SOCIAL SCIENTISTS	
INSTITUTIONAL RANKING	GRAND TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN
TOTAL, ALL PRIVATE INSTITUTIONS	72734	12542	6210	187	9547	942	1685	154	6120	884	32078	6806	5063	1300	12031	2269
1 HARVARD UNIVERSITY	3385	559	48	1	237	43	36	4	51	8	2837	478	33	8	143	17
2 CORNELL UNIVERSITY	2585	467	316	8	205	10	26	3	40	2	1490	281	29	7	479	156
3 MASS INST OF TECHNOLOGY	2032	307	752	59	470	58	94	13	126	8	374	128	41	16	175	25
4 JOHNS HOPKINS UNIVERSITY	1991	354	55	1	83	5	32	1	63	15	1611	301	29	7	118	24
5 YALE UNIVERSITY	1601	335	56	3	122	5	27	2	58	2	1119	285	41	13	178	25
6 STANFORD UNIVERSITY	1584	293	268	8	167	8	49	5	68	3	917	244	30	10	85	15
7 COLUMBIA UNIV MAIN DIV	1567	342	109	2	153	13	176	32	31	2	826	230	20	3	252	60
8 UNIV OF STHRN CALIFORNIA	1456	221	168	0	137	13	16	0	89	10	775	143	84	15	187	40
9 DUKE UNIVERSITY	1349	201	54	0	76	6	18	2	33	0	1005	176	34	3	129	14
10 UNIVERSITY OF CHICAGO	1303	236	37	1	193	18	42	1	61	2	798	193	34	9	138	12
TOTAL 1ST 10 INSTS.	18853	3315	1863	83	1843	179	516	63	620	52	11752	2459	375	91	1884	388
11 NEW YORK UNIVERSITY	1289	267	2	0	87	8	2	0	95	9	861	198	95	32	147	20
12 CASE WESTERN RESERVE UNIV	1261	205	109	6	85	4	8	0	41	1	942	178	21	3	55	13
13 WASHINGTON UNIVERSITY	1164	225	62	0	61	5	11	3	34	0	906	205	19	2	71	10
14 UNIVERSITY OF MIAMI	1021	196	45	0	44	1	88	5	26	2	682	159	33	4	103	25
15 UNIVERSITY OF ROCHESTER	1000	112	42	1	177	2	6	0	56	1	560	91	75	10	84	7
16 YESHIVA UNIVERSITY	940	206	9	0	64	10	0	0	17	4	749	159	48	19	53	14
17 NORTHWESTERN UNIVERSITY	838	171	133	42	121	10	10	0	56	9	390	91	20	7	108	12
18 CALIFORNIA INST OF TECH	699	51	144	3	215	12	133	15	50	0	99	13	2	1	56	7
19 BAYLOR COLLEGE OF MED	684	218	17	0	11	3	0	0	5	1	625	206	10	4	16	4
20 BOSTON UNIVERSITY	647	108	19	1	76	7	9	0	21	2	364	55	73	29	85	14
TOTAL 1ST 20 INSTS.	28396	5074	2445	136	2784	241	783	86	1021	81	17930	3814	771	202	2662	514
21 GEORGE WASHINGTON UNIV	632	122	92	0	37	3	11	2	64	6	257	57	34	10	137	44
22 PRINCETON UNIVERSITY	592	82	134	4	156	16	30	4	70	6	54	24	36	9	112	19
23 NEW YORK MEDICAL COLLEGE	569	124	0	0	0	0	0	0	0	0	569	124	0	0	0	0
24 SYRACUSE UNIVERSITY	517	51	91	1	64	3	11	0	86	10	36	6	65	9	164	22
25 CARNEGIE-MELLON UNIV	497	65	150	8	126	11	0	0	77	6	74	21	34	13	36	6
26 TULANE UNIVERSITY	489	78	51	0	43	5	6	1	33	4	240	35	26	10	90	23
27 BRIGHAM YOUNG UNIVERSITY	431	17	68	1	61	0	11	0	57	4	85	6	40	3	109	3
28 MED COLLEGE OF WISCONSIN	420	39	6	0	0	0	0	0	0	0	388	38	23	1	3	0
29 ST LOUIS UNIV	419	36	13	0	33	2	15	1	19	1	283	27	20	3	36	4
30 ROCKEFELLER UNIVERSITY	381	61	4	0	34	1	0	0	10	0	274	46	59	14	0	0
TOTAL 1ST 30 INSTS.	33343	5751	3054	150	3338	282	867	94	1437	118	20190	4198	1108	274	3349	635
31 NORTHEASTERN UNIVERSITY	377	37	99	1	79	3	5	0	47	5	51	6	26	7	70	15
32 WAKE FOREST UNIVERSITY	377	40	2	0	18	0	0	0	17	2	288	28	20	6	32	4
33 BROWN UNIVERSITY	367	33	56	2	71	5	19	1	54	1	77	12	19	3	71	9
34 UNIVERSITY OF DAYTON	342	27	123	1	84	6	5	2	54	6	20	3	20	4	36	5
35 DARTMOUTH COLLEGE	341	27	28	0	44	2	10	0	27	3	148	15	22	2	62	5
36 RENSSELAER POLY INST	329	14	164	0	83	7	7	0	33	0	15	4	9	1	18	2
37 UNIVERSITY OF NOTRE DAME	319	16	70	0	89	4	6	0	33	1	44	4	19	2	58	5
38 LOYOLA UNIVERSITY	301	42	0	0	19	0	0	0	15	0	185	24	31	6	51	12
39 LEHIGH UNIVERSITY	295	10	127	1	43	0	11	0	46	0	13	1	11	1	44	7
40 TUFTS UNIVERSITY	285	50	35	0	34	1	3	0	18	5	140	30	16	3	39	11
TOTAL 1ST 40 INSTS.	36676	6047	3758	155	3902	310	933	97	1781	141	21171	4325	1301	309	3830	710
41 FAIRLEIGH DICKINSON UNIV	283	50	26	1	35	2	5	1	28	4	96	22	40	11	53	9
42 RICE UNIVERSITY	283	17	83	5	89	3	15	0	23	1	29	5	9	2	35	1
43 HAHNEMANN MED COL & HOSP	280	37	1	0	8	0	0	0	1	0	247	29	20	7	3	1
44 CREIGHTON UNIVERSITY	261	30	0	0	15	1	0	0	6	1	215	25	10	2	15	1
45 THOM JEFFERSON UNIV	254	30	0	0	8	0	0	0	1	0	237	28	8	2	0	0
46 ALBANY MED COLLEGE	254	58	1	0	0	0	0	0	2	0	244	55	3	1	4	2
47 LONG ISLAND UNIVERSITY	254	45	6	0	43	3	16	3	34	5	47	6	48	16	60	12
48 MARQUETTE UNIVERSITY	233	18	45	0	27	0	0	0	21	3	91	8	13	5	36	2
49 RUSH UNIVERSITY	225	41	0	0	0	0	0	0	0	0	214	36	11	5	0	0
50 POLYTECHNIC INST OF N Y	222	12	144	1	35	3	0	0	28	2	5	4	3	1	7	1
TOTAL 1ST 50 INSTS.	39225	6385	4064	162	4162	322	969	101	1925	157	22596	4543	1466	361	4043	739
TOTAL ALL OTHER INSTS.	33509	6157	2146	25	5385	620	716	53	4195	727	9482	2263	3597	939	7988	1530

NOTE: TABLE DOES NOT INCLUDE ANY LEADING INSTITUTION THAT (1) REQUIRED NATIONAL SCIENCE FOUNDATION ESTIMATES IN 1978, OR (2) REQUESTED THAT ITS DATA BE HELD CONFIDENTIAL.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-32. FULL-TIME SCIENTISTS AND ENGINEERS AT 50 LEADING DOCTORATE-GRANTING INSTITUTIONS IN EMPLOYMENT OF SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

	TOTAL, ALL FIELDS		ENGINEERS		PHYSICAL SCIENTISTS		ENVIRON-MENTAL SCIENTISTS		MATH. AND COMPUTER SCIENTISTS		LIFE SCIENTISTS		PSYCHOLOGISTS		SOCIAL SCIENTISTS	
INSTITUTIONAL RANKING	GRAND TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN
TOTAL, ALL DOCTORATE-GRANTING INSTITUTIONS	163749	25197	18386	510	16152	1195	5693	404	11116	1191	81969	16103	7917	1770	22516	4024
1 HARVARD UNIVERSITY	3385	559	48	1	237	43	36	4	51	8	2837	478	33	8	143	17
2 UNIV OF WISCONSIN-MADISON	2965	714	281	16	230	29	195	35	188	9	1573	472	159	62	339	91
3 UNIVERSITY OF MINNESOTA	2901	457	184	0	153	8	62	3	139	11	1718	315	128	25	517	95
4 UNIVERSITY OF MICHIGAN	2728	746	368	24	260	37	95	4	110	11	1434	537	151	52	310	81
5 CORNELL UNIVERSITY	2585	467	316	8	205	10	26	3	40	2	1490	281	29	7	479	156
6 OHIO STATE UNIVERSITY	2361	469	280	10	156	8	50	2	114	6	1434	398	48	6	279	39
7 TEXAS A & M UNIVERSITY	2072	98	346	6	97	4	77	3	109	6	1032	21	41	7	370	51
8 UNIV ILLINOIS URBANA	2046	453	371	81	263	46	65	15	202	52	608	132	173	44	364	83
9 MASS INST OF TECHNOLOGY	2032	307	752	59	470	58	94	13	126	8	374	128	41	16	175	25
10 JOHNS HOPKINS UNIVERSITY	1991	354	55	1	83	5	32	1	63	15	1611	301	29	7	118	24
TOTAL 1ST 10 INSTS.	25066	4624	3001	206	2154	248	732	83	1142	128	14111	3063	832	234	3094	662
11 UNIVERSITY OF FLORIDA	1988	305	212	2	65	0	27	0	65	4	1478	280	41	8	100	11
12 LOUISIANA ST UNIV SYSTEM	1978	463	107	0	96	2	49	4	117	21	1440	408	41	8	128	20
13 UNIVERSITY OF WASHINGTON	1964	341	289	6	114	5	171	11	78	4	1074	273	47	13	191	29
14 PENNSYLVANIA STATE UNIV	1903	159	448	8	198	9	88	4	195	27	697	66	73	19	204	26
15 UNIV OF TEXAS AT AUSTIN	1680	343	239	27	399	33	144	25	154	18	214	68	139	51	391	121
16 PURDUE UNIV ALL CAMPUSES	1626	174	331	3	202	10	25	1	192	18	582	110	90	20	204	12
17 YALE UNIVERSITY	1601	335	56	3	122	5	27	2	58	2	1119	285	41	13	178	25
18 MICHIGAN STATE UNIVERSITY	1601	207	116	0	177	7	35	0	129	12	756	132	112	22	276	34
19 STANFORD UNIVERSITY	1584	293	268	8	167	8	49	5	68	3	917	244	30	10	85	15
20 COLUMBIA UNIV MAIN DIV	1567	342	109	2	153	13	176	32	31	2	826	230	20	3	252	60
TOTAL 1ST 20 INSTS.	42558	7586	5176	265	3847	340	1523	167	2229	239	23214	5159	1466	401	5103	1015
21 N C STATE UNIV AT RALEIGH	1563	122	287	5	74	6	23	2	127	8	851	66	22	7	179	28
22 UNIVERSITY OF ARIZONA	1499	215	158	0	241	10	105	7	113	15	589	128	78	19	215	36
23 UNIV OF STHRN CALIFORNIA	1456	221	168	0	137	13	16	0	89	10	775	143	84	15	187	40
24 U OF CAL LOS ANGELES	1386	204	149	3	127	4	43	2	67	3	744	148	60	12	196	32
25 RUTGERS THE STATE UNIV	1356	257	95	1	147	18	45	2	180	27	371	64	122	32	396	113
26 DUKE UNIVERSITY	1349	201	54	0	76	6	18	2	33	0	1005	176	34	3	129	14
27 UNIVERSITY OF IOWA	1340	196	68	0	70	2	14	0	61	8	927	163	33	5	167	18
28 UNIVERSITY OF CHICAGO	1303	236	37	1	193	18	42	1	61	2	798	193	34	9	138	12
29 NEW YORK UNIVERSITY	1289	267	2	0	87	8	2	0	95	9	861	198	95	32	147	20
30 UNIVERSITY OF COLORADO	1264	99	135	2	208	5	39	0	80	7	579	60	63	7	160	18
TOTAL 1ST 30 INSTS.	56363	9604	6329	277	5207	430	1870	183	3135	328	30714	6498	2091	542	7017	1346
31 CASE WESTERN RESERVE UNIV	1261	205	109	6	85	4	8	0	41	1	942	178	21	3	55	13
32 U OF CAL BERKELEY	1260	158	271	4	173	9	28	2	76	4	443	91	44	11	225	37
33 UNIV OF MD COLLEGE PARK	1239	173	163	6	268	15	15	4	137	15	361	69	78	23	217	41
34 UNIVERSITY OF UTAH	1238	195	132	5	125	4	81	7	71	4	654	149	40	4	135	22
35 UNIV OF KENTUCKY ALL CAM	1225	130	148	0	112	16	54	4	119	19	528	56	67	19	197	16
36 WASHINGTON UNIVERSITY	1164	225	62	0	61	5	11	3	34	0	906	205	19	2	71	10
37 UNIVERSITY OF GEORGIA	1151	76	29	0	82	2	53	4	70	9	647	25	102	18	168	18
38 IOWA ST U OF SCI & TECH	1147	120	310	6	81	4	45	1	90	5	418	46	40	8	163	50
39 UNIV OF MISSOURI COLUMBIA	1140	103	120	0	74	4	19	0	50	2	717	83	30	5	130	9
40 U OF CAL DAVIS	1113	103	124	4	63	2	19	0	37	3	715	67	15	2	140	25
TOTAL 1ST 40 INSTS.	68301	11092	7797	308	6331	495	2203	208	3860	390	37045	7467	2547	637	8518	1587
41 UNIVERSITY OF CONNECTICUT	1097	246	80	0	91	8	23	1	52	5	519	134	113	33	219	65
42 UNIV OF NC AT CHAPEL HILL	1092	119	0	0	122	9	58	2	80	7	685	82	43	9	104	10
43 OREGON STATE UNIVERSITY	1066	127	141	1	97	4	124	6	74	9	501	77	21	9	108	21
44 UNIV OF HAWAII-MANOA	1028	171	74	3	92	9	83	8	44	2	467	116	38	4	230	29
45 UNIVERSITY OF MIAMI	1021	196	45	0	44	1	88	5	26	2	682	159	33	4	103	25
46 WEST VIRGINIA UNIVERSITY	1009	161	101	2	35	1	16	1	47	11	341	42	23	3	446	101
47 TEMPLE UNIVERSITY	1000	171	22	2	46	2	19	3	83	10	557	83	116	32	157	39
48 UNIVERSITY OF ROCHESTER	1000	112	42	1	177	2	6	0	56	1	560	91	75	10	84	7
49 GEORGIA INSTITUTE OF TECH	997	52	583	16	165	8	14	0	93	10	20	2	11	4	111	12
50 VA POLYTECH INST & ST U	972	50	249	6	69	1	45	3	108	13	369	12	25	4	107	11
TOTAL 1ST 50 INSTS.	78583	12497	9134	339	7269	540	2679	237	4523	460	41746	8265	3045	749	10187	1907
TOTAL ALL OTHER INSTS.	85166	12700	9252	171	9883	655	3014	167	6593	731	40223	7838	4872	1021	12329	2117

NOTE: TABLE DOES NOT INCLUDE ANY LEADING INSTITUTION THAT (1) REQUIRED NATIONAL SCIENCE FOUNDATION ESTIMATES IN 1978, OR (2) REQUESTED THAT ITS DATA BE HELD CONFIDENTIAL.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-33. FULL-TIME SCIENTISTS AND ENGINEERS AT 50 LEADING MASTER'S INSTITUTIONS IN EMPLOYMENT OF SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

	TOTAL, ALL FIELDS		ENGINEERS		PHYSICAL SCIENTISTS		ENVIRON-MENTAL SCIENTISTS		MATH. AND COMPUTER SCIENTISTS		LIFE SCIENTISTS		PSYCHOLOGISTS		SOCIAL SCIENTISTS	
INSTITUTIONAL RANKING	GRAND TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN
TOTAL, ALL MASTER'S INSTITUTIONS	29559	4398	1860	18	4322	354	1187	64	4558	620	5562	987	4033	948	8037	1407
1 CAL POLY ST U SN LUIS OB	527	25	195	1	65	4	0	0	67	4	150	12	8	1	42	3
2 SAN JOSE STATE U	398	53	67	0	40	3	32	2	37	3	90	31	40	4	92	10
3 CALIF ST UNIV NORTHRIDGE	343	54	31	1	32	3	36	0	39	4	54	11	63	20	88	15
4 CALIF STATE UNIV LONG BCH	336	39	51	1	54	3	10	1	42	4	55	7	40	7	84	16
5 CUNY CITY COLLEGE	334	26	52	0	87	4	13	0	59	5	34	4	39	6	50	7
6 WRIGHT STATE UNIV	324	54	14	0	42	4	18	0	36	3	152	40	17	1	45	6
7 CALIF ST UNIV SACRAMENTO	320	52	37	0	33	2	13	2	39	5	31	4	36	5	131	34
8 CUNY BROOKLYN COLLEGE	299	55	0	0	55	2	12	2	48	4	40	9	48	15	96	23
9 CAL ST POLY U POMONA	294	37	75	1	32	3	6	0	34	2	79	20	20	6	48	5
10 CALIF STATE UNIV LA	291	25	33	0	41	2	9	0	35	2	30	2	45	8	98	11
TOTAL 1ST 10 INSTS.	3466	420	555	4	481	30	149	7	436	36	715	140	356	73	774	130
11 CALIF ST UNIV FULLERTON	286	41	24	1	38	4	8	1	28	1	25	2	33	6	130	26
12 FAIRLEIGH DICKINSON UNIV	283	50	26	1	35	2	5	1	28	4	96	22	40	11	53	9
13 EAST CAROLINA UNIVERSITY	277	49	3	0	30	2	7	1	36	10	97	21	35	6	69	9
14 CALIF STATE UNIV CHICO	270	43	17	0	28	3	16	1	34	3	54	6	38	7	83	23
15 SAN FRANCISCO ST UNIV	263	48	7	0	32	4	17	1	21	3	37	6	53	13	96	21
16 CUNY QUEENS COLLEGE	261	35	0	0	43	3	14	1	55	7	27	5	37	9	85	10
17 S ILLINOIS U EDWARDSVILLE	236	26	13	0	32	2	2	1	24	2	63	6	19	3	83	12
18 UNIV OF SOUTH ALABAMA	224	41	15	0	13	2	8	1	22	4	130	26	12	3	24	5
19 CALIF STATE UNIV FRESNO	220	16	21	0	30	2	6	0	18	1	62	6	23	3	60	4
20 CALIF ST UNIV HAYWARD	216	44	1	0	20	1	7	2	40	6	21	3	68	25	59	7
TOTAL 1ST 20 INSTS.	6002	813	682	6	782	55	239	17	742	77	1327	243	714	159	1516	256
21 WESTERN ILLINOIS UNIV	211	19	0	0	25	1	23	1	42	3	42	5	24	3	55	6
22 INDIANA U OF PENNA	204	20	0	0	36	4	5	0	45	6	31	0	20	3	67	7
23 CENTRAL MICHIGAN UNIV	199	26	0	0	27	1	18	0	34	4	22	2	42	8	56	11
24 CUNY HUNTER COLLEGE	198	43	1	0	35	3	8	1	23	6	28	8	30	10	73	15
25 SUNY COLLEGE BROCKPORT	194	48	0	0	20	4	13	0	27	6	28	10	26	8	80	20
26 WESTERN WASHINGTON UNIV	191	21	1	0	32	2	11	1	24	1	23	2	31	6	69	9
27 WSTRN KENTUCKY UNIVERSITY	190	29	10	0	26	1	16	0	29	9	31	2	31	9	47	8
28 HUMBOLDT STATE UNIVERSITY	187	16	6	0	22	0	6	0	20	3	69	1	22	6	42	6
29 ROCHESTER INST TECHNOLOGY	183	14	49	0	43	2	0	0	43	1	14	3	0	0	34	8
30 ST CLOUD STATE UNIVERSITY	183	23	4	0	24	0	14	0	36	2	28	3	25	7	52	11
TOTAL 1ST 30 INSTS.	7942	1072	753	6	1072	73	353	20	1065	118	1643	279	965	219	2091	357
31 MANKATO STATE UNIVERSITY	183	19	0	0	24	0	13	1	28	3	18	2	48	7	52	6
32 ESTRN KENTUCKY UNIVERSITY	179	30	0	0	26	2	11	0	20	4	40	9	30	7	52	8
33 UNIV OF N C AT CHARLOTTE	179	20	31	0	20	0	15	1	27	4	17	2	23	5	46	8
34 EAST TENN ST UNIV	179	25	3	0	12	0	16	0	24	4	71	13	13	1	40	7
35 UNIV OF WIS EAU CLAIRE	176	20	0	0	32	2	19	3	36	3	31	4	26	3	34	5
36 TOWSON STATE UNIV	172	41	0	0	38	5	9	0	30	11	29	7	33	9	33	9
37 SOUTHERN UNIV	170	44	40	0	26	6	0	0	38	14	37	13	8	4	21	7
38 MONTCLAIR STATE COLLEGE	170	49	0	0	21	4	4	0	31	5	14	8	39	14	61	18
39 SOUTHWEST TEXAS ST UNIV	170	26	0	0	18	0	0	0	35	6	56	10	15	3	46	7
40 EASTERN ILLINOIS UNIV	169	15	0	0	29	1	10	0	29	3	39	2	28	4	34	5
TOTAL 1ST 40 INSTS.	9691	1361	827	6	1318	93	450	25	1363	175	1995	349	1228	276	2510	437
41 SOUTHWEST MISSOURI ST U	168	22	0	0	25	2	19	0	21	3	39	3	22	5	42	9
42 UNIV OF WIS STEVNS POINT	167	16	0	0	26	2	10	0	22	1	52	4	22	5	35	4
43 FLORIDA TECH UNIV	165	13	42	0	16	0	1	0	31	2	19	1	17	4	39	6
44 GEORGE MASON UNIV	163	35	3	0	27	4	4	0	31	3	24	8	26	9	48	11
45 INTER AMERICAN U OF P R	159	73	0	0	23	10	0	0	23	9	37	18	27	14	49	22
46 SUNY COLLEGE OSWEGO	158	13	0	0	22	0	11	0	28	2	20	1	33	4	44	6
47 UNIV OF WIS OSHKOSH	156	15	2	0	28	3	12	0	26	2	28	3	14	1	46	6
48 SUNY COLLEGE BUFFALO	155	19	10	0	29	1	9	0	27	4	23	2	13	4	44	8
49 FLORIDA A & M UNIVERSITY	154	41	23	1	14	0	0	0	17	5	66	26	6	2	28	7
50 MIDDLE TENNESSEE ST UNIV	154	18	7	0	22	2	2	0	22	2	29	2	27	3	45	9
TOTAL 1ST 50 INSTS.	11290	1626	914	7	1550	117	518	25	1611	208	2332	417	1435	327	2930	525
TOTAL ALL OTHER INSTS.	18269	2772	946	11	2772	237	669	39	2947	412	3230	570	2598	621	5107	882

NOTE: TABLE DOES NOT INCLUDE ANY LEADING INSTITUTION THAT (1) REQUIRED NATIONAL SCIENCE FOUNDATION ESTIMATES IN 1978, OR (2) REQUESTED THAT ITS DATA BE HELD CONFIDENTIAL.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-34. FULL-TIME SCIENTISTS AND ENGINEERS AT 50 LEADING BACHELOR'S INSTITUTIONS IN EMPLOYMENT OF SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

	TOTAL, ALL FIELDS		ENGINEERS		PHYSICAL SCIENTISTS		ENVIRON-MENTAL SCIENTISTS		MATH. AND COMPUTER SCIENTISTS		LIFE SCIENTISTS		PSYCHOLOGISTS		SOCIAL SCIENTISTS	
INSTITUTIONAL RANKING	GRAND TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN
TOTAL, ALL BACHELOR'S INSTITUTIONS	21213	3603	1281	10	3683	419	544	33	3383	575	4013	911	2495	585	5814	1070
1 US AIR FORCE ACADEMY	405	9	131	0	60	1	0	0	78	3	26	1	26	0	84	4
2 US MILITARY ACADEMY	382	1	186	0	40	0	26	0	36	0	0	0	45	0	49	1
3 US NAVAL ACADEMY	342	10	144	0	69	2	11	1	80	2	1	0	8	3	29	2
4 WEBER STATE COLLEGE	165	16	27	0	16	1	8	0	20	1	39	10	18	1	37	3
5 FERRIS STATE COLLEGE	125	9	19	0	21	1	3	0	30	1	17	3	6	0	29	4
6 SOUTHEAST MISSOURI ST UN	122	10	0	0	16	0	10	1	23	1	23	2	16	1	34	5
7 JERSEY CITY STATE COLLEGE	118	36	0	0	14	3	7	0	15	3	31	15	17	7	34	8
8 GENERAL MOTORS INSTITUTE	109	2	63	1	13	0	0	0	18	0	1	0	5	0	9	1
9 BOISE STATE UNIVERSITY	106	10	4	0	15	0	7	0	20	2	13	1	12	1	35	6
10 STOCKTON STATE COLLEGE	101	16	0	0	16	1	15	2	14	2	14	4	11	3	31	4
TOTAL 1ST 10 INSTS.	1975	119	574	1	280	9	87	4	334	15	165	36	164	16	371	38
11 CHICAGO COL OF OSTEO MED	101	10	0	0	0	0	0	0	0	0	101	10	0	0	0	0
12 U TENNESSEE AT MARTIN	100	19	9	0	13	2	6	0	15	3	34	13	8	1	15	0
13 LAFAYETTE COLLEGE	98	11	27	0	15	1	3	0	14	2	7	2	7	3	25	3
14 OREGON INSTITUTE OF TECH	92	4	33	0	10	0	8	1	17	0	9	2	9	1	6	0
15 U OF WIS PARKSIDE	92	11	11	0	16	3	6	0	15	3	12	2	8	1	24	2
16 GLASSBORO STATE COLLEGE	92	19	0	0	9	0	6	0	18	2	12	3	21	9	26	5
17 CENTRAL STATE UNIV	91	16	0	0	19	0	0	0	20	5	16	6	8	1	28	4
18 COLGATE UNIVERSITY	90	11	0	0	12	1	6	0	12	1	9	0	9	2	42	7
19 UNIV OF N C AT WILMINGTON	89	13	0	0	14	2	9	0	16	1	22	3	9	3	19	4
20 UNIV OF SOUTHERN COLORADO	87	8	14	0	13	1	0	0	13	1	10	0	17	3	20	3
TOTAL 1ST 20 INSTS.	2907	241	668	1	401	19	131	5	474	33	397	77	260	40	576	66
21 EVERGREEN STATE COLLEGE	84	20	4	0	9	2	3	0	13	1	16	0	9	3	30	14
22 RAMAPO COLLEGE OF NJ	83	24	0	0	10	2	1	1	6	2	12	4	12	3	42	12
23 U OF ME-PORTLAND-GORHAM	83	14	1	0	12	0	4	0	16	1	9	4	9	2	32	7
24 CAMERON UNIVERSITY	80	10	10	2	9	2	0	0	12	1	15	0	1	0	33	5
25 US COAST GUARD ACADEMY	80	2	25	0	22	0	5	0	16	2	0	0	3	0	9	0
26 AMHERST COLLEGE	79	16	0	0	17	3	4	0	12	2	11	6	4	1	31	4
27 LA SALLE COLLEGE	76	10	0	0	9	0	2	1	12	2	9	2	18	2	26	3
28 OHIO NORTHERN UNIV	74	6	14	0	10	0	0	0	10	2	28	2	3	1	9	1
29 ST LAWRENCE UNIVERSITY	73	8	0	0	12	0	8	0	10	1	10	1	10	2	23	4
30 CALVIN COLLEGE	73	2	2	0	14	0	1	0	11	0	9	1	12	1	24	0
TOTAL 1ST 30 INSTS.	3692	353	724	3	525	28	159	7	592	47	516	97	341	55	835	116
31 FRANKLIN & MARSHALL COL	69	4	0	0	15	2	8	1	7	0	8	0	11	0	20	1
32 FAIRFIELD UNIVERSITY	69	8	1	0	16	0	0	0	14	1	7	1	15	5	16	1
33 W VIRGINIA INST OF TECH	69	8	32	0	10	1	1	0	12	4	5	2	0	0	9	1
34 XAVIER UNIVERSITY OF LA	66	24	0	0	11	4	0	0	14	7	26	8	2	0	13	5
35 DENISON UNIVERSITY	66	7	0	0	11	0	4	0	9	1	8	1	10	2	24	3
36 DEL VAL COL OF SCI & AGRI	65	1	0	0	10	0	2	0	4	0	40	1	2	0	7	0
37 ST OLAF COLLEGE	64	8	0	0	12	0	0	0	13	2	8	1	9	1	22	4
38 GETTYSBURG COLLEGE	63	7	0	0	14	1	0	0	8	0	9	1	10	4	22	1
39 ST PETER'S COLLEGE	63	15	0	0	9	2	0	0	14	4	11	3	8	3	21	3
40 HOPE COLLEGE	62	3	0	0	21	0	4	1	9	0	9	1	8	1	11	0
TOTAL 1ST 40 INSTS.	4348	438	757	3	654	38	178	9	696	66	647	116	416	71	1000	135
41 FORT LEWIS COLLEGE	62	5	3	0	9	1	5	0	11	0	10	1	9	1	15	2
42 KANS CITY COL OSTEO MED	61	5	0	0	2	0	0	0	2	0	57	5	0	0	0	0
43 MERRIMACK COLLEGE	61	8	11	0	11	2	0	0	8	0	9	2	7	2	15	2
44 COLBY COLLEGE	60	6	0	0	8	0	3	0	7	1	8	1	6	1	28	3
45 VIRGINIA MILITARY INST	59	0	18	0	16	0	1	0	10	0	6	0	1	0	7	0
46 NORTHEASTERN OKLA ST UNIV	59	6	0	0	8	0	1	0	7	0	8	1	14	1	21	4
47 FITCHBURG STATE COL	59	12	1	0	12	1	3	0	12	2	10	2	15	4	6	3
48 CUNY YORK COLLEGE	59	15	0	0	11	1	3	0	13	4	11	5	10	2	11	3
49 CANISIUS COLLEGE	58	4	0	0	13	0	0	0	9	0	9	2	7	2	20	0
50 COLUMBUS COLLEGE	58	9	0	0	5	0	4	0	11	1	8	1	7	2	23	5
TOTAL 1ST 50 INSTS.	4944	508	790	3	749	43	198	9	786	74	783	136	492	86	1146	157
TOTAL ALL OTHER INSTS.	16269	3095	491	7	2934	376	346	24	2597	501	3230	775	2003	499	4668	913

NOTE: TABLE DOES NOT INCLUDE ANY LEADING INSTITUTION THAT (1) REQUIRED NATIONAL SCIENCE FOUNDATION ESTIMATES IN 1978, OR (2) REQUESTED THAT ITS DATA BE HELD CONFIDENTIAL.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-35. FULL-TIME SCIENTISTS AND ENGINEERS AT 50 LEADING 2-YEAR INSTITUTIONS IN EMPLOYMENT OF SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

	TOTAL, ALL FIELDS		ENGINEERS		PHYSICAL SCIENTISTS		ENVIRON-MENTAL SCIENTISTS		MATH. AND COMPUTER SCIENTISTS		LIFE SCIENTISTS		PSYCHOLOGISTS		SOCIAL SCIENTISTS	
INSTITUTIONAL RANKING	GRAND TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN	TOTAL	WOMEN
TOTAL, ALL 2-YEAR INSTITUTIONS	26183	5429	3068	54	3658	474	675	59	5161	1060	5653	1763	2867	981	5101	1038
1 MIAMI-DADE CMTY COLLEGE	325	76	55	2	47	7	7	0	62	19	62	17	33	15	59	16
2 NORTHERN VA CMTY COLLEGE	259	105	40	0	24	10	0	0	45	13	83	58	20	11	47	13
3 UNIV WISCONSIN CENTER SYS	209	29	5	0	50	8	14	1	43	3	36	4	15	3	46	10
4 CUYAHOGA CMTY COL ALL CAM	178	50	15	1	16	6	1	0	39	13	31	7	51	18	25	5
5 CUNY N Y CITY CMTY COL	161	26	52	1	27	4	0	0	28	5	28	10	9	2	17	4
6 COMMUNITY COLLEGE DENVER	160	38	35	0	12	0	3	0	26	9	16	5	37	12	31	12
7 CUNY QUEENSBORO CMTY COL	156	40	35	1	21	3	0	0	34	10	30	14	18	7	18	5
8 MONTGOMRY COLL ALL CAMP	156	55	8	0	22	6	5	0	39	14	32	19	13	5	37	11
9 ORANGE COAST COLLEGE	154	29	26	2	11	2	9	0	18	2	32	9	33	10	25	4
10 WENTWORTH INST OF TECH	152	8	96	1	12	1	0	0	14	0	0	0	0	0	30	6
TOTAL 1ST 10 INSTS.	1910	456	367	8	242	47	39	1	348	88	350	143	229	83	335	86
11 NASSAU CMTY COLLEGE	150	24	13	0	27	5	4	0	44	2	29	10	17	5	16	2
12 DIABLO VALLEY COLLEGE	149	34	14	0	21	2	0	0	16	3	31	12	18	5	49	12
13 EL CAMINO COLLEGE	147	36	3	0	22	4	12	1	22	2	42	19	17	7	29	3
14 SAN ANTONIO COLLEGE	146	18	1	0	20	2	8	0	37	6	22	3	22	3	36	4
15 CITY COL OF SAN FRANCISCO	142	25	25	0	32	5	3	0	23	3	22	8	12	3	25	6
16 SUNY AG&TECH FARMNGDALE	135	30	32	[illegible]	24	1	2	0	19	2	36	15	5	2	17	9
17 MILWAUKEE AREA TECH COL	132	30	33	0	31	11	0	0	25	6	0	0	4	0	39	13
18 TIDEWATER COMM COLLEGE	130	39	9	0	9	0	2	0	27	8	16	6	43	18	24	7
19 SPRINGFIELD TECH CMTY COL	130	51	33	1	11	2	0	0	13	0	52	41	6	3	15	4
20 ST PETERSBURG JR COLLEGE	128	29	11	0	12	4	8	0	34	6	21	8	10	3	32	6
TOTAL 1ST 20 INSTS.	3299	772	541	10	451	83	78	2	608	126	621	265	383	132	617	154
21 LOS ANGELES PIERCE COL	128	29	7	0	17	5	9	3	21	1	30	6	22	10	22	4
22 WEST VALLEY COLLEGE	127	44	15	5	9	1	4	1	12	2	29	17	38	13	20	5
23 MOUNT SAN ANTONIO COLLEGE	123	43	0	0	15	3	5	0	16	3	63	32	12	5	12	0
24 ERIE CMTY COLLEGE	123	15	37	0	22	2	0	0	29	5	8	2	0	0	27	6
25 MONROE COMMUNITY COLLEGE	122	20	18	0	13	2	8	0	25	1	23	12	12	1	23	4
26 AMERICAN RIVER COLLEGE	120	15	5	0	21	3	2	0	27	3	19	2	22	4	24	3
27 WESTCHESTER CMTY COLLEGE	117	26	18	0	17	3	4	2	16	2	27	11	20	8	15	0
28 SUNY AG&TECH ALFRED	117	5	35	1	12	0	0	0	19	1	39	3	6	0	6	0
29 COLLEGE OF DU PAGE	112	20	14	0	7	1	1	0	22	5	15	3	11	2	42	9
30 MACOMB CO CMTY COLL ALL C	107	22	18	0	13	2	4	1	14	1	24	8	14	6	20	4
TOTAL 1ST 30 INSTS.	4495	1011	708	16	597	105	115	9	809	150	898	361	540	181	828	189
31 FLORIDA JR COL JACKSONVL	105	25	11	1	11	1	2	0	16	3	19	9	16	6	30	5
32 CUNY BRONX CMTY COLLEGE	103	8	15	2	18	1	0	0	28	1	26	2	5	1	11	1
33 PENSACOLA JR COLLEGE	102	19	6	0	19	2	3	0	24	4	21	5	10	4	19	4
34 LOS ANGELES CITY COLLEGE	100	30	3	0	15	3	7	3	27	7	14	4	19	9	15	4
35 MIDDLESEX COUNTY COLLEGE	100	23	18	0	17	5	3	2	25	5	18	6	9	3	10	2
36 SAN DIEGO MESA COLLEGE	99	22	5	0	16	2	1	0	12	3	24	10	12	3	29	4
37 HUDSON VALLEY CMTY COL	99	12	27	0	22	1	4	1	11	0	21	8	5	2	9	0
38 HILLSBOROUGH CMTY COLL	97	31	8	0	6	1	0	0	19	6	16	2	24	13	24	9
39 GRAND RAPIDS JR COLLEGE	97	21	18	0	17	5	4	0	9	1	17	5	15	5	17	5
40 GROSSMONT COLLEGE	96	21	10	1	10	1	7	1	18	4	13	3	23	9	15	2
TOTAL 1ST 40 INSTS.	5493	1223	829	20	748	127	146	16	998	184	1087	415	678	236	1007	225
41 WM RAINEY HARPER COLLEGE	94	23	14	1	8	1	2	0	14	5	15	3	27	11	14	2
42 METRO COMMUNITY COLLEGE	89	20	10	0	12	2	4	0	19	4	13	5	23	8	8	1
43 PASADENA CITY COLLEGE	88	19	8	0	17	3	5	0	19	5	15	3	12	4	12	4
44 EAST LOS ANGELES COLLEGE	87	17	9	0	11	1	6	0	17	3	14	6	14	5	16	2
45 MADISON AREA TECH COLLEGE	87	38	11	0	10	1	0	0	11	3	37	28	4	2	14	4
46 LOS ANGELES HARBOR COL	85	29	1	0	8	3	3	0	12	3	11	5	23	12	27	6
47 LOS ANGELES VALLEY COL	85	18	6	0	12	2	9	1	19	2	13	4	13	4	13	5
48 SINCLAIR CMTY COLLEGE	85	18	25	1	8	1	0	0	17	6	8	3	9	3	18	4
49 COLUMBUS TECHNICAL INST	85	18	29	0	7	2	0	0	8	0	13	4	12	8	16	4
50 DE ANZA COLLEGE	84	19	7	0	10	0	3	0	17	3	9	3	25	10	13	3
TOTAL 1ST 50 INSTS.	6362	1442	949	22	851	143	178	17	1151	218	1235	479	840	303	1158	260
TOTAL ALL OTHER INSTS.	19821	3987	2119	32	2807	331	497	42	4010	842	4418	1284	2027	678	3943	778

NOTE: TABLE DOES NOT INCLUDE ANY LEADING INSTITUTION THAT (1) REQUIRED NATIONAL SCIENCE FOUNDATION ESTIMATES IN 1978, OR (2) REQUESTED THAT ITS DATA BE HELD CONFIDENTIAL.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-36. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, INSTITUTIONAL CONTROL AND STATUS: JANUARY 1978

DIVISION AND STATE	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
UNITED STATES TOTAL	209,876	168,365	41,511	96,671	72,734	23,937
NEW ENGLAND	8,118	6,864	1,254	16,950	12,762	4,188
CONNECTICUT	2,311	1,850	461	3,098	2,318	780
MAINE	812	655	157	247	206	41
MASSACHUSETTS	3,164	2,804	360	12,153	9,031	3,122
NEW HAMPSHIRE	473	437	36	630	467	163
RHODE ISLAND	643	601	42	565	512	53
VERMONT	715	517	198	257	228	29
MIDDLE ATLANTIC	26,925	20,073	6,852	29,360	20,951	8,409
NEW JERSEY	4,933	3,754	1,179	2,352	1,509	843
NEW YORK	13,510	9,869	3,641	18,159	13,795	4,364
PENNSYLVANIA	8,482	6,450	2,032	8,849	5,647	3,202
EAST NORTH CENTRAL	39,328	30,824	8,504	13,637	10,475	3,162
ILLINOIS	9,289	7,114	2,175	5,870	4,570	1,300
INDIANA	4,216	3,521	695	1,263	1,058	205
MICHIGAN	10,376	8,255	2,121	1,392	886	506
OHIO	8,925	6,448	2,477	3,496	2,809	687
WISCONSIN	6,522	5,486	1,036	1,616	1,152	464
WEST NORTH CENTRAL	17,438	15,458	1,980	4,989	4,203	786
IOWA	3,286	2,954	332	792	688	104
KANSAS	3,244	2,811	433	293	246	47
MINNESOTA	4,446	3,768	678	755	606	149
MISSOURI	3,160	2,908	252	2,474	2,139	335
NEBRASKA	1,533	1,359	174	517	407	110
NORTH DAKOTA	869	840	29	25	20	5
SOUTH DAKOTA	900	818	82	133	97	36
SOUTH ATLANTIC	32,021	26,565	5,456	14,038	10,873	3,165
DELAWARE	672	617	55	24	23	1
DISTRICT OF COLUMBIA	206	149	57	3,527	2,225	1,302
FLORIDA	6,215	5,130	1,085	1,780	1,512	268
GEORGIA	4,374	3,851	523	1,513	1,256	257
MARYLAND	4,965	3,586	1,379	2,699	2,232	467
NORTH CAROLINA	5,204	4,695	509	2,994	2,388	606
SOUTH CAROLINA	2,779	2,263	516	434	388	46
VIRGINIA	5,853	4,732	1,121	804	656	148
WEST VIRGINIA	1,753	1,542	211	263	193	70
EAST SOUTH CENTRAL	12,510	10,644	1,866	2,891	2,428	463
ALABAMA	3,733	3,054	679	433	386	47
KENTUCKY	2,815	2,446	369	387	308	79
MISSISSIPPI	1,996	1,817	179	157	131	26
TENNESSEE	3,966	3,327	639	1,914	1,603	311
WEST SOUTH CENTRAL	22,301	19,044	3,257	4,019	3,325	694
ARKANSAS	2,148	1,851	297	150	126	24
LOUISIANA	4,038	3,354	684	796	694	102
OKLAHOMA	1,958	1,701	257	335	267	68
TEXAS	14,157	12,138	2,019	2,738	2,238	500
MOUNTAIN	13,956	12,174	1,782	1,110	911	199
ARIZONA	3,134	2,617	517	33	31	2
COLORADO	3,911	3,543	368	317	248	69
IDAHO	944	855	89	114	102	12
MONTANA	898	815	83	69	45	24
NEVADA	511	433	78	0	0	0
NEW MEXICO	1,518	1,362	156	56	38	18
UTAH	2,385	1,950	435	521	447	74
WYOMING	655	599	56	0	0	0
PACIFIC	35,185	24,871	10,314	9,148	6,479	2,669
ALASKA	376	312	64	11	9	2
CALIFORNIA	24,663	16,616	8,047	8,246	5,758	2,488
HAWAII	1,307	1,043	264	65	24	41
OREGON	3,758	2,855	903	362	304	58
WASHINGTON	5,081	4,045	1,036	464	384	80
OUTLYING AREAS	2,094	1,848	246	529	327	202

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-37. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, STATUS AND PRIMARY FUNCTION: JANUARY 1978

DIVISION AND STATE	FULL TIME				PART TIME			
	TOTAL	TEACHING	R & D	OTHER	TOTAL	TEACHING	R & D	OTHER
UNITED STATES TOTAL	241,099	178,799	47,157	15,143	65,448	56,561	7,175	1,712
NEW ENGLAND	19,626	14,246	4,671	709	5,442	4,657	655	130
CONNECTICUT	4,168	2,955	1,025	188	1,241	1,024	184	33
MAINE	861	692	121	48	198	180	16	2
MASSACHUSETTS	11,835	8,340	3,182	313	3,482	3,026	404	52
NEW HAMPSHIRE	904	728	115	61	199	128	31	40
RHODE ISLAND	1,113	925	169	19	95	85	10	0
VERMONT	745	606	59	80	227	214	10	3
MIDDLE ATLANTIC	41,024	31,032	7,841	2,151	15,261	13,847	1,053	361
NEW JERSEY	5,263	4,314	750	199	2,022	1,907	77	38
NEW YORK	23,664	16,949	5,294	1,421	8,005	7,285	552	168
PENNSYLVANIA	12,097	9,769	1,797	531	5,234	4,655	424	155
EAST NORTH CENTRAL	41,299	30,003	7,851	3,445	11,666	9,722	1,520	424
ILLINOIS	11,684	8,224	2,379	1,081	3,475	2,940	369	166
INDIANA	4,579	3,532	378	669	900	783	36	81
MICHIGAN	9,141	6,711	1,980	450	2,627	2,247	336	44
OHIO	9,257	6,872	1,387	998	3,164	2,710	350	104
WISCONSIN	6,638	4,664	1,727	247	1,500	1,042	429	29
WEST NORTH CENTRAL	19,661	14,987	3,344	1,330	2,766	2,323	341	102
IOWA	3,642	2,554	709	379	436	321	84	31
KANSAS	3,057	2,285	580	192	480	383	63	34
MINNESOTA	4,374	4,078	247	49	827	750	69	8
MISSOURI	5,047	3,631	1,154	262	587	496	74	17
NEBRASKA	1,766	1,227	295	244	284	256	17	11
NORTH DAKOTA	860	615	196	49	34	30	3	1
SOUTH DAKOTA	915	597	163	155	118	87	31	0
SOUTH ATLANTIC	37,438	27,369	7,448	2,621	8,621	7,595	700	326
DELAWARE	640	451	153	36	56	43	13	0
DISTRICT OF COLUMBIA	2,374	1,936	405	33	1,359	1,253	106	0
FLORIDA	6,642	5,386	1,038	218	1,353	1,254	89	10
GEORGIA	5,107	3,333	1,290	484	780	621	80	79
MARYLAND	5,818	3,653	1,880	285	1,846	1,537	123	165
NORTH CAROLINA	7,083	4,922	1,378	783	1,115	957	151	7
SOUTH CAROLINA	2,651	1,880	341	430	562	483	48	31
VIRGINIA	5,368	4,178	925	265	1,269	1,170	86	13
WEST VIRGINIA	1,735	1,630	38	67	281	277	4	0
EAST SOUTH CENTRAL	13,072	10,008	2,086	978	2,329	2,171	121	37
ALABAMA	3,440	2,567	652	221	726	706	19	1
KENTUCKY	2,754	2,076	445	233	448	407	26	15
MISSISSIPPI	1,948	1,543	280	125	205	202	1	2
TENNESSEE	4,930	3,822	709	399	950	856	75	19
WEST SOUTH CENTRAL	22,369	15,887	4,340	2,142	3,951	3,479	393	79
ARKANSAS	1,977	1,340	225	412	321	296	7	18
LOUISIANA	4,048	3,071	534	443	786	723	52	11
OKLAHOMA	1,968	1,658	225	85	325	315	9	1
TEXAS	14,376	9,818	3,356	1,202	2,519	2,145	325	49
MOUNTAIN	13,085	9,338	2,886	861	1,981	1,629	265	87
ARIZONA	2,648	1,800	695	153	519	429	63	27
COLORADO	3,791	3,153	533	105	437	394	26	17
IDAHO	957	538	91	328	101	76	0	25
MONTANA	860	660	196	4	107	94	13	0
NEVADA	433	301	118	14	78	65	10	3
NEW MEXICO	1,400	896	336	168	174	135	24	15
UTAH	2,397	1,618	718	61	509	401	108	0
WYOMING	599	372	199	28	56	35	21	0
PACIFIC	31,350	24,237	6,256	857	12,983	10,790	2,029	164
ALASKA	321	187	131	3	66	49	16	1
CALIFORNIA	22,374	18,059	3,794	521	10,535	8,816	1,597	122
HAWAII	1,067	580	360	127	305	260	31	14
OREGON	3,159	2,099	947	113	961	768	182	11
WASHINGTON	4,429	3,312	1,024	93	1,116	897	203	16
OUTLYING AREAS	2,175	1,692	434	49	448	348	98	2

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-38. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, AND FIELD: JANUARY 1978

DIVISION AND STATE	TOTAL	ENGINEERS	PHYSICAL SCIENTISTS	ENVIRON-MENTAL SCIENTISTS	MATH. AND COMPUTER SCIENTISTS	LIFE SCIENTISTS	PSYCHOL-OGISTS	SOCIAL SCIENTISTS
UNITED STATES TOTAL	306,547	30,900	32,794	9,428	32,947	122,522	23,720	54,236
NEW ENGLAND	25,068	2,799	2,882	770	2,089	10,859	1,739	3,930
CONNECTICUT	5,409	427	535	112	500	2,305	504	1,026
MAINE	1,059	102	121	78	133	258	102	265
MASSACHUSETTS	15,317	1,920	1,827	454	1,118	7,170	845	1,983
NEW HAMPSHIRE	1,103	132	137	40	92	430	80	192
RHODE ISLAND	1,208	141	172	67	161	249	121	297
VERMONT	972	77	90	19	85	447	87	167
MIDDLE ATLANTIC	56,285	5,206	6,363	1,327	6,499	21,147	5,278	10,465
NEW JERSEY	7,285	775	951	197	996	1,862	852	1,652
NEW YORK	31,669	2,773	3,540	783	3,508	12,017	3,010	6,038
PENNSYLVANIA	17,331	1,658	1,872	347	1,995	7,268	1,416	2,775
EAST NORTH CENTRAL	52,965	5,320	5,678	1,578	5,827	21,223	4,181	9,158
ILLINOIS	15,159	1,270	1,633	388	1,853	5,966	1,286	2,763
INDIANA	5,479	565	717	145	690	1,878	458	1,026
MICHIGAN	11,768	1,324	1,273	311	1,217	4,735	904	2,004
OHIO	12,421	1,495	1,185	314	1,285	5,338	855	1,949
WISCONSIN	8,138	666	870	420	782	3,306	678	1,416
WEST NORTH CENTRAL	22,427	1,960	2,159	609	2,006	10,191	1,635	3,867
IOWA	4,078	450	354	86	356	1,865	247	720
KANSAS	3,537	306	340	92	350	1,434	328	687
MINNESOTA	5,201	269	459	137	459	2,354	419	1,104
MISSOURI	5,634	471	572	150	489	2,709	413	830
NEBRASKA	2,050	189	244	58	180	1,016	113	250
NORTH DAKOTA	894	138	93	58	94	342	47	122
SOUTH DAKOTA	1,033	137	97	28	78	471	68	154
SOUTH ATLANTIC	46,059	4,341	4,426	1,248	5,451	19,101	3,066	8,426
DELAWARE	696	127	123	61	85	133	39	128
DISTRICT OF COLUMBIA	3,733	343	247	22	379	1,851	153	738
FLORIDA	7,995	794	738	331	941	3,172	594	1,425
GEORGIA	5,887	777	626	125	616	2,274	433	1,036
MARYLAND	7,664	500	810	122	916	3,520	529	1,267
NORTH CAROLINA	8,198	643	743	194	889	3,901	477	1,351
SOUTH CAROLINA	3,213	379	343	60	435	1,231	204	561
VIRGINIA	6,657	591	632	307	997	2,370	540	1,220
WEST VIRGINIA	2,016	187	164	26	193	649	97	700
EAST SOUTH CENTRAL	15,401	1,477	1,431	305	1,819	6,588	1,175	2,606
ALABAMA	4,166	430	364	70	553	1,802	303	644
KENTUCKY	3,202	277	341	104	357	1,198	293	632
MISSISSIPPI	2,153	170	236	25	285	842	143	452
TENNESSEE	5,880	600	490	106	624	2,746	436	878
WEST SOUTH CENTRAL	26,320	2,388	2,557	716	2,796	11,880	1,683	4,300
ARKANSAS	2,298	115	169	23	155	1,328	102	406
LOUISIANA	4,834	391	424	113	480	2,623	224	579
OKLAHOMA	2,293	341	282	73	343	563	174	517
TEXAS	16,895	1,541	1,682	507	1,818	7,366	1,183	2,798
MOUNTAIN	15,066	2,138	1,810	802	1,568	5,038	1,079	2,631
ARIZONA	3,167	443	430	165	343	914	281	591
COLORADO	4,228	668	554	165	498	1,277	356	710
IDAHO	1,058	107	99	49	97	456	63	187
MONTANA	967	117	120	57	103	293	51	226
NEVADA	511	39	63	66	49	140	31	123
NEW MEXICO	1,574	260	180	71	188	547	97	231
UTAH	2,906	401	287	164	225	1,195	169	465
WYOMING	655	103	77	65	65	216	31	98
PACIFIC	44,333	5,041	5,142	2,042	4,595	15,549	3,708	8,256
ALASKA	387	51	27	77	18	100	26	86
CALIFORNIA	32,909	3,852	3,985	1,344	3,501	10,961	3,000	6,266
HAWAII	1,372	88	110	93	69	615	65	332
OREGON	4,120	341	507	216	470	1,647	296	643
WASHINGTON	5,545	709	513	312	537	2,226	319	929
OUTLYING AREAS	2,623	230	346	31	297	946	176	597

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-39. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, AND FIELD: JANUARY 1978

DIVISION AND STATE	TOTAL	ENGINEERS	PHYSICAL SCIENTISTS	ENVIRONMENTAL SCIENTISTS	MATH. AND COMPUTER SCIENTISTS	LIFE SCIENTISTS	PSYCHOLOGISTS	SOCIAL SCIENTISTS
UNITED STATES TOTAL	241,099	24,601	27,861	8,109	24,317	97,238	17,362	41,611
NEW ENGLAND	19,626	2,326	2,572	668	1,678	7,933	1,310	3,139
CONNECTICUT	4,168	313	442	90	340	1,881	352	750
MAINE	861	93	105	60	93	226	72	212
MASSACHUSETTS	11,835	1,595	1,670	409	939	4,971	663	1,588
NEW HAMPSHIRE	904	119	117	26	77	335	60	170
RHODE ISLAND	1,113	136	154	65	151	233	101	273
VERMONT	745	70	84	18	78	287	62	146
MIDDLE ATLANTIC	41,024	4,072	5,109	1,122	4,359	15,359	3,572	7,431
NEW JERSEY	5,263	590	744	157	696	1,366	554	1,156
NEW YORK	23,664	2,230	2,877	672	2,314	9,307	2,006	4,258
PENNSYLVANIA	12,097	1,252	1,488	293	1,349	4,686	1,012	2,017
EAST NORTH CENTRAL	41,299	4,353	4,984	1,346	4,285	16,000	3,169	7,162
ILLINOIS	11,684	1,014	1,428	317	1,318	4,462	990	2,155
INDIANA	4,579	531	638	129	535	1,554	367	825
MICHIGAN	9,141	1,085	1,100	267	891	3,538	681	1,579
OHIO	9,257	1,138	1,033	272	884	3,875	611	1,444
WISCONSIN	6,638	585	785	361	657	2,571	520	1,159
WEST NORTH CENTRAL	19,661	1,746	1,979	552	1,765	8,974	1,334	3,311
IOWA	3,642	415	331	75	323	1,673	209	616
KANSAS	3,057	269	313	84	301	1,229	265	596
MINNESOTA	4,374	209	407	126	395	1,937	342	958
MISSOURI	5,047	435	527	136	433	2,507	337	672
NEBRASKA	1,766	151	221	51	152	885	86	220
NORTH DAKOTA	860	136	91	56	90	332	39	116
SOUTH DAKOTA	915	131	89	24	71	411	56	133
SOUTH ATLANTIC	37,438	3,493	3,795	1,130	4,015	16,129	2,346	6,530
DELAWARE	640	119	104	54	82	124	34	123
DISTRICT OF COLUMBIA	2,374	207	201	14	191	1,174	119	468
FLORIDA	6,642	612	620	294	707	2,859	448	1,102
GEORGIA	5,107	676	572	119	530	1,974	343	893
MARYLAND	5,818	410	682	96	614	2,907	325	784
NORTH CAROLINA	7,083	542	661	179	737	3,405	418	1,141
SOUTH CAROLINA	2,651	289	308	56	335	1,024	163	476
VIRGINIA	5,388	482	501	293	664	2,119	415	914
WEST VIRGINIA	1,735	156	146	25	155	543	81	629
EAST SOUTH CENTRAL	13,072	1,232	1,276	277	1,416	5,747	940	2,184
ALABAMA	3,440	353	304	65	384	1,603	230	501
KENTUCKY	2,754	222	314	97	299	1,040	245	537
MISSISSIPPI	1,948	169	222	23	263	742	120	409
TENNESSEE	4,930	488	436	92	470	2,362	345	737
WEST SOUTH CENTRAL	22,369	2,023	2,348	647	2,280	10,089	1,324	3,658
ARKANSAS	1,977	102	158	19	132	1,107	88	371
LOUISIANA	4,048	330	398	98	451	2,053	193	525
OKLAHOMA	1,968	295	258	67	247	527	150	424
TEXAS	14,376	1,296	1,534	463	1,450	6,402	893	2,338
MOUNTAIN	13,085	1,862	1,662	709	1,331	4,442	900	2,179
ARIZONA	2,648	369	389	152	286	768	224	460
COLORADO	3,791	563	520	148	421	1,200	304	615
IDAHO	957	103	91	37	82	435	55	154
MONTANA	860	107	113	52	83	262	44	199
NEVADA	433	37	53	60	36	123	30	94
NEW MEXICO	1,400	207	170	57	169	505	85	197
UTAH	2,397	358	252	133	195	960	128	371
WYOMING	599	98	74	60	59	189	30	89
PACIFIC	31,350	3,295	3,848	1,630	2,948	11,796	2,344	5,489
ALASKA	321	43	23	75	15	76	20	69
CALIFORNIA	22,374	2,338	2,882	1,020	2,173	8,135	1,840	3,986
HAWAII	1,067	76	100	84	51	475	42	239
OREGON	3,159	258	426	193	316	1,344	179	443
WASHINGTON	4,429	580	417	258	393	1,766	263	752
OUTLYING AREAS	2,175	199	288	28	240	769	123	528

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-40. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, INSTITUTIONAL CONTROL, AND PRIMARY FUNCTION: JANUARY 1978

DIVISION AND STATE	PUBLIC				PRIVATE			
	TOTAL	TEACHING	R & D	OTHER	TOTAL	TEACHING	R & D	OTHER
UNITED STATES TOTAL	209,876	164,497	32,489	12,890	96,671	70,863	21,843	3,965
NEW ENGLAND	8,118	6,726	859	533	16,950	12,177	4,467	306
CONNECTICUT	2,311	1,799	312	200	3,098	2,180	897	21
MAINE	812	631	132	49	247	241	5	1
MASSACHUSETTS	3,164	2,779	230	155	12,153	8,587	3,356	210
NEW HAMPSHIRE	473	397	46	30	630	459	100	71
RHODE ISLAND	643	553	73	17	565	457	106	2
VERMONT	715	567	66	82	257	253	3	1
MIDDLE ATLANTIC	26,925	23,799	2,225	901	29,360	21,080	6,669	1,611
NEW JERSEY	4,933	4,266	499	168	2,352	1,955	328	69
NEW YORK	13,510	12,180	878	452	18,159	12,054	4,968	1,137
PENNSYLVANIA	8,482	7,353	848	281	8,849	7,071	1,373	405
EAST NORTH CENTRAL	39,328	29,113	7,092	3,123	13,637	10,612	2,279	746
ILLINOIS	9,289	6,960	1,379	950	5,870	4,204	1,369	297
INDIANA	4,216	3,150	336	730	1,263	1,165	78	20
MICHIGAN	10,376	7,620	2,303	453	1,392	1,338	13	41
OHIO	8,925	7,137	1,032	756	3,496	2,445	705	346
WISCONSIN	6,522	4,246	2,042	234	1,616	1,460	114	42
WEST NORTH CENTRAL	17,438	13,316	2,903	1,219	4,989	3,994	782	213
IOWA	3,286	2,097	786	403	792	778	7	7
KANSAS	3,244	2,380	643	221	293	288	0	5
MINNESOTA	4,446	4,106	311	29	755	722	5	28
MISSOURI	3,160	2,555	481	124	2,474	1,572	747	155
NEBRASKA	1,533	1,004	289	240	517	479	23	15
NORTH DAKOTA	869	622	199	48	25	23	0	2
SOUTH DAKOTA	900	552	194	154	133	132	0	1
SOUTH ATLANTIC	32,021	25,194	4,246	2,581	14,038	9,770	3,902	366
DELAWARE	672	471	165	36	24	23	1	0
DISTRICT OF COLUMBIA	206	201	3	2	3,527	2,988	508	31
FLORIDA	6,215	5,435	652	128	1,780	1,205	475	100
GEORGIA	4,374	2,832	1,067	475	1,513	1,122	303	88
MARYLAND	4,965	4,194	328	443	2,699	996	1,675	28
NORTH CAROLINA	5,204	3,878	615	711	2,994	2,001	914	79
SOUTH CAROLINA	2,779	1,941	387	451	434	422	2	10
VIRGINIA	5,853	4,589	987	277	804	759	24	21
WEST VIRGINIA	1,753	1,653	42	58	263	254	0	9
EAST SOUTH CENTRAL	12,510	9,875	1,752	883	2,891	2,304	455	132
ALABAMA	3,733	2,856	664	213	433	417	7	9
KENTUCKY	2,815	2,105	470	240	387	378	1	8
MISSISSIPPI	1,996	1,590	281	125	157	155	0	2
TENNESSEE	3,966	3,324	337	305	1,914	1,354	447	113
WEST SOUTH CENTRAL	22,301	16,440	3,847	2,014	4,019	2,926	886	207
ARKANSAS	2,148	1,492	229	427	150	144	3	3
LOUISIANA	4,038	3,230	452	356	796	564	134	98
OKLAHOMA	1,958	1,653	223	82	335	320	11	4
TEXAS	14,157	10,065	2,943	1,149	2,738	1,898	738	102
MOUNTAIN	13,956	9,974	3,038	944	1,110	993	113	4
ARIZONA	3,134	2,196	758	180	33	33	0	0
COLORADO	3,911	3,266	526	119	317	281	33	3
IDAHO	944	501	91	352	114	113	0	1
MONTANA	898	685	209	4	69	69	0	0
NEVADA	511	366	128	17	0	0	0	0
NEW MEXICO	1,518	976	359	183	56	55	1	0
UTAH	2,385	1,577	747	61	521	442	79	0
WYOMING	655	407	220	28	0	0	0	0
PACIFIC	35,185	28,530	6,009	646	9,148	6,497	2,276	375
ALASKA	376	225	147	4	11	11	0	0
CALIFORNIA	24,663	21,209	3,168	286	8,246	5,666	2,223	357
HAWAII	1,307	776	390	141	65	64	1	0
OREGON	3,758	2,551	1,088	119	362	316	41	5
WASHINGTON	5,081	3,769	1,216	96	464	440	11	13
OUTLYING AREAS	2,094	1,530	518	46	529	510	14	5

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-41. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, INSTITUTIONAL CONTROL, AND PRIMARY FUNCTION: JANUARY 1978

DIVISION AND STATE	PUBLIC				PRIVATE			
	TOTAL	TEACHING	R & D	OTHER	TOTAL	TEACHING	R & D	OTHER
UNITED STATES TOTAL	168,365	128,761	27,802	11,782	72,734	50,018	19,355	3,361
NEW ENGLAND	6,864	5,595	784	485	12,762	8,651	3,887	224
CONNECTICUT	1,850	1,399	284	167	2,318	1,556	741	21
MAINE	655	457	121	47	206	205	0	1
MASSACHUSETTS	2,804	2,453	206	145	9,031	5,887	2,976	168
NEW HAMPSHIRE	437	361	46	30	467	367	69	31
RHODE ISLAND	601	513	71	17	512	412	98	2
VERMONT	517	382	56	79	228	224	3	1
MIDDLE ATLANTIC	20,073	17,210	2,043	820	20,951	13,822	5,798	1,331
NEW JERSEY	3,754	3,139	464	151	1,509	1,175	286	48
NEW YORK	9,869	8,655	803	411	13,795	8,294	4,491	1,010
PENNSYLVANIA	6,450	5,416	776	258	5,647	4,353	1,021	273
EAST NORTH CENTRAL	30,824	22,277	5,774	2,773	10,475	7,726	2,077	672
ILLINOIS	7,114	5,149	1,163	802	4,570	3,075	1,216	279
INDIANA	3,521	2,561	310	650	1,058	971	68	19
MICHIGAN	8,255	5,868	1,968	419	886	843	12	31
OHIO	6,448	5,053	705	690	2,809	1,819	682	308
WISCONSIN	5,486	3,646	1,628	212	1,152	1,018	99	35
WEST NORTH CENTRAL	15,458	11,704	2,617	1,137	4,203	3,283	727	193
IOWA	2,954	1,880	702	372	688	674	7	7
KANSAS	2,811	2,044	580	187	246	241	0	5
MINNESOTA	3,768	3,497	244	27	606	581	3	22
MISSOURI	2,908	2,329	460	119	2,139	1,302	694	143
NEBRASKA	1,359	857	272	230	407	370	23	14
NORTH DAKOTA	840	596	196	48	20	19	0	1
SOUTH DAKOTA	818	501	163	154	97	96	0	1
SOUTH ATLANTIC	26,565	20,383	3,901	2,281	10,873	6,986	3,547	340
DELAWARE	617	429	152	36	23	22	1	0
DISTRICT OF COLUMBIA	149	144	3	2	2,225	1,792	402	31
FLORIDA	5,130	4,422	584	124	1,512	964	454	94
GEORGIA	3,851	2,434	1,012	405	1,256	899	278	79
MARYLAND	3,586	3,056	272	258	2,232	597	1,608	27
NORTH CAROLINA	4,695	3,391	598	706	2,388	1,531	780	77
SOUTH CAROLINA	2,263	1,502	339	422	388	378	2	8
VIRGINIA	4,732	3,559	903	270	656	619	22	15
WEST VIRGINIA	1,542	1,446	38	58	193	184	0	9
EAST SOUTH CENTRAL	10,644	8,104	1,688	852	2,428	1,904	398	126
ALABAMA	3,054	2,196	645	213	386	371	7	8
KENTUCKY	2,446	1,777	444	225	308	299	1	8
MISSISSIPPI	1,817	1,414	280	123	131	129	0	2
TENNESSEE	3,327	2,717	319	291	1,603	1,105	390	108
WEST SOUTH CENTRAL	19,044	13,543	3,541	1,960	3,325	2,344	799	182
ARKANSAS	1,851	1,220	222	409	126	120	3	3
LOUISIANA	3,354	2,587	413	354	694	484	121	89
OKLAHOMA	1,701	1,406	214	81	267	252	11	4
TEXAS	12,138	8,330	2,692	1,116	2,238	1,488	664	86
MOUNTAIN	12,174	8,535	2,782	857	911	803	104	4
ARIZONA	2,617	1,769	695	153	31	31	0	0
COLORADO	3,543	2,937	504	102	248	216	29	3
IDAHO	855	437	91	327	102	101	0	1
MONTANA	815	615	196	4	45	45	0	0
NEVADA	433	301	118	14	0	0	0	0
NEW MEXICO	1,362	859	335	168	38	37	1	0
UTAH	1,950	1,245	644	61	447	373	74	0
WYOMING	599	372	199	28	0	0	0	0
PACIFIC	24,871	20,047	4,251	573	6,479	4,190	2,005	284
ALASKA	312	178	131	3	9	9	0	0
CALIFORNIA	16,616	14,524	1,838	254	5,758	3,535	1,956	267
HAWAII	1,043	557	359	127	24	23	1	0
OREGON	2,855	1,841	906	108	304	258	41	5
WASHINGTON	4,045	2,947	1,017	81	384	365	7	12
OUTLYING AREAS	1,848	1,383	421	44	327	309	13	5

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-42. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, AND TYPE OF INSTITUTION: JANUARY 1978

DIVISION AND STATE	TOTAL	INSTITUTIONS GRANTING:				2-YEAR INSTITUTIONS
		DOCTORATE IN S & E	MASTER'S IN S & E	BACHELOR'S IN S & E	OTHER DEGREES	
UNITED STATES TOTAL	306,547	198,872	39,181	26,259	523	41,712
NEW ENGLAND	25,068	18,095	2,975	1,986	143	1,869
CONNECTICUT	5,409	3,305	1,300	312	6	486
MAINE	1,059	498	0	462	2	97
MASSACHUSETTS	15,317	11,959	1,333	923	84	1,018
NEW HAMPSHIRE	1,103	864	17	130	0	92
RHODE ISLAND	1,208	871	162	44	29	102
VERMONT	972	598	163	115	22	74
MIDDLE ATLANTIC	56,285	33,338	9,300	5,648	62	7,937
NEW JERSEY	7,285	3,560	1,635	750	0	1,340
NEW YORK	31,669	18,622	5,627	2,579	47	4,794
PENNSYLVANIA	17,331	11,156	2,038	2,319	15	1,803
EAST NORTH CENTRAL	52,965	35,633	5,389	4,796	217	6,930
ILLINOIS	15,159	9,523	1,558	1,189	10	2,879
INDIANA	5,479	4,169	589	627	0	94
MICHIGAN	11,766	7,932	647	1,342	20	1,827
OHIO	12,421	8,774	1,077	1,163	71	1,336
WISCONSIN	8,138	5,235	1,518	475	116	794
WEST NORTH CENTRAL	22,427	15,779	1,694	3,128	41	1,785
IOWA	4,078	2,744	255	644	0	435
KANSAS	3,537	2,582	232	340	0	383
MINNESOTA	5,201	3,471	645	698	22	365
MISSOURI	5,634	3,835	477	935	19	368
NEBRASKA	2,050	1,651	85	213	0	101
NORTH DAKOTA	894	671	0	114	0	109
SOUTH DAKOTA	1,033	825	0	184	0	24
SOUTH ATLANTIC	46,359	29,535	4,819	4,447	23	7,235
DELAWARE	696	525	0	71	0	100
DISTRICT OF COLUMBIA	3,733	3,474	237	22	0	0
FLORIDA	7,995	4,534	1,034	200	0	2,227
GEORGIA	5,887	4,147	402	703	0	635
MARYLAND	7,664	4,917	764	682	14	1,287
NORTH CAROLINA	8,198	5,116	1,113	988	9	972
SOUTH CAROLINA	3,213	1,939	311	440	0	523
VIRGINIA	6,657	3,784	815	666	0	1,392
WEST VIRGINIA	2,016	1,099	143	675	0	99
EAST SOUTH CENTRAL	15,401	9,763	2,493	1,450	21	1,674
ALABAMA	4,166	2,480	805	269	13	599
KENTUCKY	3,202	2,104	643	420	0	35
MISSISSIPPI	2,153	1,280	273	196	0	404
TENNESSEE	5,880	3,899	772	565	8	636
WEST SOUTH CENTRAL	26,320	19,237	2,575	1,776	0	2,732
ARKANSAS	2,298	1,544	356	325	0	73
LOUISIANA	4,834	3,978	592	210	0	54
OKLAHOMA	2,293	1,138	76	636	0	443
TEXAS	16,895	12,577	1,551	605	0	2,162
MOUNTAIN	15,066	11,311	362	1,699	0	1,694
ARIZONA	3,167	2,448	0	33	0	686
COLORADO	4,228	2,679	35	1,029	0	485
IDAHO	1,058	722	0	216	0	120
MONTANA	967	698	82	137	0	50
NEVADA	511	329	115	0	0	67
NEW MEXICO	1,574	1,356	130	56	0	32
UTAH	2,906	2,589	0	228	0	89
WYOMING	655	490	0	0	0	165
PACIFIC	44,333	24,501	9,090	1,130	16	9,596
ALASKA	387	376	0	0	0	11
CALIFORNIA	32,909	16,527	8,058	528	16	7,780
HAWAII	1,372	1,262	0	65	0	45
OREGON	4,120	2,645	249	327	0	899
WASHINGTON	5,545	3,691	783	210	0	861
OUTLYING AREAS	2,623	1,680	484	199	0	260

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-43. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, AND TYPE OF INSTITUTION: JANUARY 1978

DIVISION AND STATE	TOTAL	INSTITUTIONS GRANTING:				2-YEAR INSTITUTIONS
		DOCTORATE IN S & E	MASTER'S IN S & E	BACHELOR'S IN S & E	OTHER DEGREES	
UNITED STATES TOTAL	241,099	163,749	29,559	21,213	395	26,183
NEW ENGLAND	19,626	14,286	2,172	1,537	118	1,513
CONNECTICUT	4,168	2,818	769	227	6	348
MAINE	861	454	0	373	2	32
MASSACHUSETTS	11,835	9,086	1,107	698	61	883
NEW HAMPSHIRE	904	694	9	112	0	89
RHODE ISLAND	1,113	824	129	29	29	102
VERMONT	745	410	158	98	20	59
MIDDLE ATLANTIC	41,024	25,854	6,524	4,226	35	4,385
NEW JERSEY	5,263	2,987	947	563	0	766
NEW YORK	23,664	14,968	3,761	1,886	24	3,025
PENNSYLVANIA	12,097	7,899	1,816	1,777	11	594
EAST NORTH CENTRAL	41,299	28,780	4,398	3,704	162	4,255
ILLINOIS	11,684	7,727	1,245	934	2	1,776
INDIANA	4,579	3,612	436	468	0	63
MICHIGAN	9,141	6,371	579	1,016	16	1,159
OHIO	9,257	6,912	798	911	33	603
WISCONSIN	6,638	4,158	1,340	375	111	654
WEST NORTH CENTRAL	19,661	13,998	1,528	2,668	35	1,432
IOWA	3,642	2,487	226	574	0	355
KANSAS	3,057	2,260	217	274	0	306
MINNESOTA	4,374	2,901	590	576	22	285
MISSOURI	5,047	3,519	423	797	13	295
NEBRASKA	1,766	1,432	72	181	0	81
NORTH DAKOTA	860	653	0	109	0	98
SOUTH DAKOTA	915	746	0	157	0	12
SOUTH ATLANTIC	37,438	25,153	3,938	3,859	17	4,471
DELAWARE	640	470	0	71	0	99
DISTRICT OF COLUMBIA	2,374	2,182	176	16	0	0
FLORIDA	6,642	4,154	833	173	0	1,482
GEORGIA	5,107	3,679	371	623	0	434
MARYLAND	5,818	4,090	485	613	14	616
NORTH CAROLINA	7,083	4,509	979	858	3	734
SOUTH CAROLINA	2,651	1,682	282	411	0	276
VIRGINIA	5,388	3,378	672	572	0	766
WEST VIRGINIA	1,735	1,009	140	522	0	64
EAST SOUTH CENTRAL	13,072	8,484	2,157	1,284	15	1,132
ALABAMA	3,440	2,172	692	246	9	321
KENTUCKY	2,754	1,781	590	357	0	26
MISSISSIPPI	1,948	1,162	246	180	0	360
TENNESSEE	4,930	3,369	629	501	6	425
WEST SOUTH CENTRAL	22,369	16,867	2,247	1,470	0	1,785
ARKANSAS	1,977	1,314	311	292	0	60
LOUISIANA	4,048	3,300	568	155	0	25
OKLAHOMA	1,968	1,061	76	554	0	277
TEXAS	14,376	11,192	1,292	469	0	1,423
MOUNTAIN	13,085	10,216	342	1,434	0	1,093
ARIZONA	2,648	2,229	0	31	0	388
COLORADO	3,791	2,575	35	880	0	301
IDAHO	957	690	0	159	0	108
MONTANA	860	643	72	112	0	33
NEVADA	433	299	113	0	0	21
NEW MEXICO	1,400	1,218	122	38	0	22
UTAH	2,397	2,100	0	214	0	83
WYOMING	599	462	0	0	0	137
PACIFIC	31,350	18,653	5,939	880	13	5,865
ALASKA	321	312	0	0	0	9
CALIFORNIA	22,374	12,230	5,051	374	13	4,706
HAWAII	1,067	1,028	0	24	0	15
OREGON	3,159	2,163	211	292	0	493
WASHINGTON	4,429	2,920	677	190	0	642
OUTLYING AREAS	2,175	1,458	314	151	0	252

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-44. SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, AND LEVEL OF ATTAINMENT: JANUARY 1978

DIVISION AND STATE	TOTAL	PH.D. OR SC.D.	ED.D.	M.D., D.D.S., ETC.	MASTER'S	BACHELOR'S
UNITED STATES TOTAL	306,547	151,433	4,011	46,775	78,702	25,626
NEW ENGLAND	25,068	12,674	202	5,125	5,127	1,940
CONNECTICUT	5,409	2,619	46	799	1,480	465
MAINE	1,059	612	21	6	308	112
MASSACHUSETTS	15,317	7,503	99	3,924	2,643	1,148
NEW HAMPSHIRE	1,103	605	22	170	211	95
RHODE ISLAND	1,208	910	10	8	246	34
VERMONT	972	425	4	218	239	86
MIDDLE ATLANTIC	56,285	26,951	769	10,101	14,401	4,063
NEW JERSEY	7,285	3,600	158	798	2,332	397
NEW YORK	31,669	15,514	361	5,586	7,981	2,227
PENNSYLVANIA	17,331	7,837	250	3,717	4,088	1,439
EAST NORTH CENTRAL	52,965	27,266	593	7,726	13,031	4,349
ILLINOIS	15,159	7,409	196	2,428	4,066	1,060
INDIANA	5,479	3,444	82	523	1,103	327
MICHIGAN	11,768	5,393	124	1,441	3,397	1,413
OHIO	12,421	6,236	67	2,047	2,925	1,146
WISCONSIN	8,138	4,784	124	1,287	1,540	403
WEST NORTH CENTRAL	22,427	11,533	382	3,307	5,432	1,773
IOWA	4,078	2,146	22	542	999	369
KANSAS	3,537	1,888	91	386	916	256
MINNESOTA	5,201	2,566	122	795	1,325	393
MISSOURI	5,634	2,934	100	1,153	1,125	322
NEBRASKA	2,050	1,071	14	339	502	124
NORTH DAKOTA	894	472	6	49	258	109
SOUTH DAKOTA	1,033	456	27	43	307	200
SOUTH ATLANTIC	46,059	22,282	710	7,074	12,209	3,784
DELAWARE	696	492	6	5	125	68
DISTRICT OF COLUMBIA	3,733	1,733	7	1,117	678	198
FLORIDA	7,995	3,805	188	832	2,484	686
GEORGIA	5,887	3,177	162	800	1,440	308
MARYLAND	7,664	3,217	58	1,793	2,047	549
NORTH CAROLINA	8,198	4,049	132	1,123	2,049	845
SOUTH CAROLINA	3,213	1,622	11	277	818	485
VIRGINIA	6,657	3,192	135	809	1,982	539
WEST VIRGINIA	2,016	995	11	318	586	106
EAST SOUTH CENTRAL	15,401	7,569	298	2,414	4,314	806
ALABAMA	4,166	1,970	52	690	1,338	116
KENTUCKY	3,202	1,743	50	546	751	112
MISSISSIPPI	2,153	1,107	53	187	699	107
TENNESSEE	5,880	2,749	143	991	1,526	471
WEST SOUTH CENTRAL	26,320	12,626	464	3,736	6,466	3,028
ARKANSAS	2,298	917	55	462	613	251
LOUISIANA	4,834	2,316	45	864	1,133	476
OKLAHOMA	2,293	1,286	124	68	674	141
TEXAS	16,895	8,107	240	2,342	4,046	2,160
MOUNTAIN	15,066	9,124	172	1,200	3,465	1,105
ARIZONA	3,167	1,766	58	171	871	301
COLORADO	4,228	2,619	50	394	932	233
IDAHO	1,058	575	13	15	341	114
MONTANA	967	612	12	21	238	84
NEVADA	511	338	5	19	113	36
NEW MEXICO	1,574	964	7	162	318	123
UTAH	2,906	1,897	21	391	431	166
WYOMING	655	353	6	27	221	48
PACIFIC	44,333	20,707	407	5,790	12,984	4,445
ALASKA	387	247	15	4	111	10
CALIFORNIA	32,909	15,042	297	4,359	10,164	3,047
HAWAII	1,372	757	3	176	288	148
OREGON	4,120	1,844	34	396	1,145	701
WASHINGTON	5,545	2,817	58	855	1,276	539
OUTLYING AREAS	2,623	701	14	302	1,273	333

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-45. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, AND LEVEL OF ATTAINMENT: JANUARY 1978

DIVISION AND STATE	TOTAL	PH.D. OR SC.D.	ED.D.	M.D., D.D.S., ETC.	MASTER'S	BACHELOR'S
UNITED STATES TOTAL	241,099	135,163	3,319	31,586	54,194	16,837
NEW ENGLAND	19,626	11,399	166	2,934	3,597	1,530
CONNECTICUT	4,168	2,306	44	611	893	314
MAINE	861	552	13	5	209	82
MASSACHUSETTS	11,835	6,737	87	2,134	1,918	959
NEW HAMPSHIRE	904	552	9	92	180	71
RHODE ISLAND	1,113	868	10	5	203	27
VERMONT	745	384	3	87	194	77
MIDDLE ATLANTIC	41,024	23,420	559	6,034	8,638	2,373
NEW JERSEY	5,263	3,176	130	444	1,289	224
NEW YORK	23,664	13,541	244	3,808	4,712	1,359
PENNSYLVANIA	12,097	6,703	185	1,782	2,637	790
EAST NORTH CENTRAL	41,299	24,244	494	4,714	8,892	2,955
ILLINOIS	11,684	6,696	169	1,417	2,682	720
INDIANA	4,579	3,236	74	328	760	181
MICHIGAN	9,141	4,819	103	818	2,352	1,049
OHIO	9,257	5,336	44	1,261	1,917	699
WISCONSIN	6,638	4,157	104	890	1,181	306
WEST NORTH CENTRAL	19,661	10,938	343	2,676	4,343	1,361
IOWA	3,642	2,061	22	467	788	304
KANSAS	3,057	1,757	89	278	732	201
MINNESOTA	4,374	2,448	103	564	1,015	244
MISSOURI	5,047	2,777	84	1,035	903	248
NEBRASKA	1,766	1,015	13	251	400	87
NORTH DAKOTA	860	460	6	46	247	101
SOUTH DAKOTA	915	420	26	35	258	176
SOUTH ATLANTIC	37,438	20,090	610	5,607	8,772	2,359
DELAWARE	640	462	6	5	108	59
DISTRICT OF COLUMBIA	2,374	1,242	3	662	365	102
FLORIDA	6,642	3,495	156	767	1,832	392
GEORGIA	5,107	3,019	149	592	1,127	220
MARYLAND	5,818	2,735	41	1,461	1,265	316
NORTH CAROLINA	7,083	3,715	119	1,018	1,640	591
SOUTH CAROLINA	2,651	1,541	9	158	627	316
VIRGINIA	5,388	2,927	117	707	1,326	311
WEST VIRGINIA	1,735	954	10	237	482	52
EAST SOUTH CENTRAL	13,072	7,068	264	1,868	3,261	611
ALABAMA	3,440	1,840	42	563	918	77
KENTUCKY	2,754	1,663	46	416	562	67
MISSISSIPPI	1,948	1,056	50	114	629	99
TENNESSEE	4,930	2,509	126	775	1,152	368
WEST SOUTH CENTRAL	22,369	11,782	422	2,577	5,116	2,472
ARKANSAS	1,977	869	51	297	539	221
LOUISIANA	4,048	2,225	44	445	961	373
OKLAHOMA	1,968	1,215	115	59	508	71
TEXAS	14,376	7,473	212	1,776	3,108	1,807
MOUNTAIN	13,085	8,521	159	1,000	2,654	751
ARIZONA	2,648	1,684	55	105	586	218
COLORADO	3,791	2,473	49	381	778	110
IDAHO	957	557	10	14	275	101
MONTANA	860	580	11	16	197	56
NEVADA	433	320	4	16	75	18
NEW MEXICO	1,400	904	7	142	248	99
UTAH	2,397	1,657	17	306	308	109
WYOMING	599	346	6	20	187	40
PACIFIC	31,350	17,061	295	3,963	7,840	2,191
ALASKA	321	224	13	4	75	5
CALIFORNIA	22,374	12,001	205	3,054	5,911	1,203
HAWAII	1,067	692	1	71	192	111
OREGON	3,159	1,625	30	247	766	491
WASHINGTON	4,429	2,519	46	587	896	381
OUTLYING AREAS	2,175	640	7	213	1,081	234

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-46. FULL-TIME SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, AND SEX: JANUARY 1978

DIVISION AND STATE	TOTAL	MEN			WOMEN		
		NUMBER	PERCENT DISTRI-BUTION	PERCENT OF TOTAL	NUMBER	PERCENT DISTRI-BUTION	PERCENT OF TOTAL
UNITED STATES TOTAL	241,099	202,413	100.0%	84.0%	38,686	100.0%	16.0%
NEW ENGLAND	19,626	16,393	8.1	83.5	3,233	8.4	16.5
CONNECTICUT	4,168	3,336	1.6	80.0	832	2.2	20.0
MAINE	861	767	.4	89.1	94	.2	10.9
MASSACHUSETTS	11,835	9,829	4.9	83.1	2,006	5.2	16.9
NEW HAMPSHIRE	904	816	.4	90.3	88	.2	9.7
RHODE ISLAND	1,113	984	.5	88.4	129	.3	11.6
VERMONT	745	661	.3	88.7	84	.2	11.3
MIDDLE ATLANTIC	41,024	34,173	16.9	83.3	6,851	17.7	16.7
NEW JERSEY	5,263	4,281	2.1	81.3	982	2.5	18.7
NEW YORK	23,664	19,717	9.7	83.3	3,947	10.2	16.7
PENNSYLVANIA	12,097	10,175	5.0	84.1	1,922	5.0	15.9
EAST NORTH CENTRAL	41,299	34,060	16.8	82.5	7,239	18.7	17.5
ILLINOIS	11,684	9,476	4.7	81.1	2,208	5.7	18.9
INDIANA	4,579	3,943	1.9	86.1	636	1.6	13.9
MICHIGAN	9,141	7,393	3.7	80.9	1,748	4.5	19.1
OHIO	9,257	7,846	3.9	84.8	1,411	3.6	15.2
WISCONSIN	6,638	5,402	2.7	81.4	1,236	3.2	18.6
WEST NORTH CENTRAL	19,661	17,015	8.4	86.5	2,646	6.8	13.5
IOWA	3,642	3,145	1.6	86.4	497	1.3	13.6
KANSAS	3,057	2,576	1.3	84.3	481	1.2	15.7
MINNESOTA	4,374	3,722	1.8	85.1	652	1.7	14.9
MISSOURI	5,047	4,376	2.2	86.7	671	1.7	13.3
NEBRASKA	1,766	1,597	.8	90.4	169	.4	9.6
NORTH DAKOTA	860	795	.4	92.4	65	.2	7.6
SOUTH DAKOTA	915	804	.4	87.9	111	.3	12.1
SOUTH ATLANTIC	37,438	31,392	15.5	83.9	6,046	15.6	16.1
DELAWARE	640	559	.3	87.3	81	.2	12.7
DISTRICT OF COLUMBIA	2,374	1,854	.9	78.1	520	1.3	21.9
FLORIDA	6,642	5,516	2.7	83.0	1,126	2.9	17.0
GEORGIA	5,107	4,366	2.2	85.5	741	1.9	14.5
MARYLAND	5,818	4,724	2.3	81.2	1,094	2.8	18.8
NORTH CAROLINA	7,083	6,060	3.0	85.6	1,023	2.6	14.4
SOUTH CAROLINA	2,651	2,327	1.1	87.8	324	.8	12.2
VIRGINIA	5,388	4,540	2.2	84.3	848	2.2	15.7
WEST VIRGINIA	1,735	1,446	.7	83.3	289	.7	16.7
EAST SOUTH CENTRAL	13,072	11,000	5.4	84.1	2,072	5.4	15.9
ALABAMA	3,440	2,921	1.4	84.9	519	1.3	15.1
KENTUCKY	2,754	2,417	1.2	87.8	337	.9	12.2
MISSISSIPPI	1,948	1,635	.8	83.9	313	.8	16.1
TENNESSEE	4,930	4,027	2.0	81.7	903	2.3	18.3
WEST SOUTH CENTRAL	22,369	18,508	9.1	82.7	3,861	10.0	17.3
ARKANSAS	1,977	1,620	.8	81.9	357	.9	18.1
LOUISIANA	4,048	3,225	1.6	79.7	823	2.1	20.3
OKLAHOMA	1,968	1,766	.9	89.7	202	.5	10.3
TEXAS	14,376	11,897	5.9	82.8	2,479	6.4	17.2
MOUNTAIN	13,085	11,786	5.8	90.1	1,299	3.4	9.9
ARIZONA	2,648	2,310	1.1	87.2	338	.9	12.8
COLORADO	3,791	3,467	1.7	91.5	324	.8	8.5
IDAHO	957	899	.4	93.9	58	.1	6.1
MONTANA	860	797	.4	92.7	63	.2	7.3
NEVADA	433	399	.2	92.1	34	.1	7.9
NEW MEXICO	1,400	1,266	.6	90.4	134	.3	9.6
UTAH	2,397	2,135	1.1	89.1	262	.7	10.9
WYOMING	599	513	.3	85.6	86	.2	14.4
PACIFIC	31,350	26,666	13.2	85.1	4,684	12.1	14.9
ALASKA	321	284	.1	88.5	37	.1	11.5
CALIFORNIA	22,374	19,023	9.4	85.0	3,351	8.7	15.0
HAWAII	1,067	891	.4	83.5	176	.5	16.5
OREGON	3,159	2,643	1.3	83.7	516	1.3	16.3
WASHINGTON	4,429	3,825	1.9	86.4	604	1.6	13.6
OUTLYING AREAS	2,175	1,420	.7	65.3	755	2.0	34.7

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-47. R&D SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY FIELD, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

FIELD	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
TOTAL	32,489	27,802	4,687	21,843	19,355	2,488
ENGINEERS, TOTAL	3,351	2,812	539	2,222	1,946	276
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	85	73	12	183	163	20
CHEMICAL ENGINEERS	252	214	38	166	150	16
CIVIL ENGINEERS	367	333	34	151	132	19
ELECTRICAL ENGINEERS	553	502	51	608	525	83
MECHANICAL ENGINEERS	368	305	63	304	267	37
OTHER ENGINEERS	1,726	1,385	341	810	709	101
PHYSICAL SCIENTISTS, TOTAL	3,847	3,221	626	3,015	2,810	205
CHEMISTS	1,753	1,370	383	1,494	1,395	99
PHYSICISTS	1,339	1,171	168	1,328	1,240	88
OTHER PHYSICAL SCIENTISTS	755	680	75	193	175	18
ENVIRONMENTAL SCIENTISTS, TOTAL	2,038	1,772	266	742	697	45
EARTH SCIENTISTS	990	837	153	373	347	26
ATMOSPHERIC SCIENTISTS	358	306	52	112	105	7
OCEANOGRAPHERS	690	629	61	257	245	12
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	940	855	85	792	691	101
MATHEMATICIANS	472	428	44	475	419	56
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	468	427	41	317	272	45
LIFE SCIENTISTS, TOTAL	18,492	16,044	2,448	13,387	11,807	1,580
AGRICULTURAL SCIENTISTS	4,310	3,972	338	245	238	7
BIOLOGICAL SCIENTISTS	6,977	6,121	856	5,547	5,121	426
MEDICAL SCIENTISTS	7,205	5,951	1,254	7,595	6,448	1,147
PSYCHOLOGISTS	1,056	797	259	592	493	99
SOCIAL SCIENTISTS, TOTAL	2,765	2,301	464	1,093	911	182
ECONOMISTS	1,033	935	98	271	238	33
SOCIOLOGISTS	598	477	121	236	194	42
POLITICAL SCIENTISTS	317	253	64	197	162	35
OTHER SOCIAL SCIENTISTS	817	636	181	389	317	72

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-48. R&D SCIENTISTS AND ENGINEERS EMPLOYED IN INSTITUTIONS AWARDING DOCTORATE DEGREES IN THE SCIENCES AND ENGINEERING, BY FIELD, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

FIELD	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
TOTAL	31,595	26,975	4,620	21,456	19,025	2,431
ENGINEERS, TOTAL	3,295	2,760	535	2,178	1,908	270
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	80	71	9	183	163	20
CHEMICAL ENGINEERS	248	210	38	165	149	16
CIVIL ENGINEERS	360	326	34	149	130	19
ELECTRICAL ENGINEERS	541	490	51	587	505	82
MECHANICAL ENGINEERS	358	295	63	297	260	37
OTHER ENGINEERS	1,708	1,368	340	797	701	96
PHYSICAL SCIENTISTS, TOTAL	3,713	3,105	608	2,902	2,715	187
CHEMISTS	1,678	1,303	375	1,439	1,351	88
PHYSICISTS	1,292	1,132	160	1,276	1,195	81
OTHER PHYSICAL SCIENTISTS	743	670	73	187	169	18
ENVIRONMENTAL SCIENTISTS, TOTAL	1,986	1,720	266	737	693	44
EARTH SCIENTISTS	953	800	153	372	346	26
ATMOSPHERIC SCIENTISTS	357	305	52	110	103	7
OCEANOGRAPHERS	676	615	61	255	244	11
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	868	787	81	742	649	93
MATHEMATICIANS	447	405	42	450	398	52
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	421	382	39	292	251	41
LIFE SCIENTISTS, TOTAL	18,142	15,730	2,412	13,280	11,713	1,567
AGRICULTURAL SCIENTISTS	4,197	3,864	333	236	230	6
BIOLOGICAL SCIENTISTS	6,838	5,999	839	5,479	5,061	418
MEDICAL SCIENTISTS	7,107	5,867	1,240	7,565	6,422	1,143
PSYCHOLOGISTS	991	732	259	582	483	99
SOCIAL SCIENTISTS, TOTAL	2,600	2,141	459	1,035	864	171
ECONOMISTS	989	892	97	260	229	31
SOCIOLOGISTS	555	437	118	223	185	38
POLITICAL SCIENTISTS	301	238	63	185	155	30
OTHER SOCIAL SCIENTISTS	755	574	181	367	295	72

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-49. R&D SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY DIVISION, STATE, INSTITUTIONAL CONTROL, AND STATUS: JANUARY 1978

DIVISION AND STATE	PUBLIC			PRIVATE		
	TOTAL	FULL TIME	PART TIME	TOTAL	FULL TIME	PART TIME
UNITED STATES TOTAL	32,489	27,802	4,687	21,843	19,355	2,488
NEW ENGLAND	859	784	75	4,467	3,887	580
CONNECTICUT	312	284	28	897	741	156
MAINE	132	121	11	5	0	5
MASSACHUSETTS	230	206	24	3,356	2,976	380
NEW HAMPSHIRE	46	46	0	100	69	31
RHODE ISLAND	73	71	2	106	98	8
VERMONT	66	56	10	3	3	0
MIDDLE ATLANTIC	2,225	2,043	182	6,669	5,798	871
NEW JERSEY	499	464	35	328	286	42
NEW YORK	878	803	75	4,968	4,491	477
PENNSYLVANIA	848	776	72	1,373	1,021	352
EAST NORTH CENTRAL	7,092	5,774	1,318	2,279	2,077	202
ILLINOIS	1,379	1,163	216	1,369	1,216	153
INDIANA	336	310	26	78	68	10
MICHIGAN	2,303	1,968	335	13	12	1
OHIO	1,032	705	327	705	682	23
WISCONSIN	2,042	1,628	414	114	99	15
WEST NORTH CENTRAL	2,903	2,617	286	782	727	55
IOWA	786	702	84	7	7	0
KANSAS	643	580	63	0	0	0
MINNESOTA	311	244	67	5	3	2
MISSOURI	481	460	21	747	694	53
NEBRASKA	289	272	17	23	23	0
NORTH DAKOTA	199	196	3	0	0	0
SOUTH DAKOTA	194	163	31	0	0	0
SOUTH ATLANTIC	4,246	3,901	345	3,902	3,547	355
DELAWARE	165	152	13	1	1	0
DISTRICT OF COLUMBIA	3	3	0	508	402	106
FLORIDA	652	584	68	475	454	21
GEORGIA	1,067	1,012	55	303	278	25
MARYLAND	328	272	56	1,675	1,608	67
NORTH CAROLINA	615	598	17	914	780	134
SOUTH CAROLINA	387	339	48	2	2	0
VIRGINIA	987	903	84	24	22	2
WEST VIRGINIA	42	38	4	0	0	0
EAST SOUTH CENTRAL	1,752	1,688	64	455	398	57
ALABAMA	664	645	19	7	7	0
KENTUCKY	470	444	26	1	1	0
MISSISSIPPI	281	280	1	0	0	0
TENNESSEE	337	319	18	447	390	57
WEST SOUTH CENTRAL	3,847	3,541	306	886	799	87
ARKANSAS	229	222	7	3	3	0
LOUISIANA	452	413	39	134	121	13
OKLAHOMA	223	214	9	11	11	0
TEXAS	2,943	2,692	251	738	664	74
MOUNTAIN	3,038	2,782	256	113	104	9
ARIZONA	758	695	63	0	0	0
COLORADO	526	504	22	33	29	4
IDAHO	91	91	0	0	0	0
MONTANA	209	196	13	0	0	0
NEVADA	128	118	10	0	0	0
NEW MEXICO	359	335	24	1	1	0
UTAH	747	644	103	79	74	5
WYOMING	220	199	21	0	0	0
PACIFIC	6,009	4,251	1,758	2,276	2,005	271
ALASKA	147	131	16	0	0	0
CALIFORNIA	3,168	1,838	1,330	2,223	1,956	267
HAWAII	390	359	31	1	1	0
OREGON	1,088	906	182	41	41	0
WASHINGTON	1,216	1,017	199	11	7	4
OUTLYING AREAS	518	421	97	14	13	1

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-50. FULL-TIME EQUIVALENT SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY FIELD, INSTITUTIONAL CONTROL, AND PRIMARY FUNCTION: JANUARY 1978

FIELD	TOTAL		PUBLIC		PRIVATE	
	TOTAL FTE	R&D FTE[1]	TOTAL FTE	R&D FTE	TOTAL FTE	R&D FTE
TOTAL	270,741	55,164	186,913	34,525	83,828	20,639
ENGINEERS, TOTAL	27,507	5,841	20,468	3,660	7,039	2,181
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	1,028	288	660	116	368	172
CHEMICAL ENGINEERS	1,879	455	1,269	283	610	172
CIVIL ENGINEERS	4,691	693	3,703	504	988	189
ELECTRICAL ENGINEERS	6,281	1,337	4,408	760	1,873	577
MECHANICAL ENGINEERS	5,033	820	3,696	492	1,337	328
OTHER ENGINEERS	8,595	2,246	6,732	1,501	1,863	745
PHYSICAL SCIENTISTS, TOTAL	30,547	6,875	20,204	3,916	10,343	2,959
CHEMISTS	16,367	3,231	10,772	1,818	5,595	1,413
PHYSICISTS	12,076	2,743	7,813	1,433	4,263	1,310
OTHER PHYSICAL SCIENTISTS	2,104	901	1,619	666	485	235
ENVIRONMENTAL SCIENTISTS, TOTAL	8,830	2,362	6,967	1,809	1,863	553
EARTH SCIENTISTS	6,482	1,328	5,138	1,042	1,344	286
ATMOSPHERIC SCIENTISTS	881	420	702	366	179	54
OCEANOGRAPHERS	1,467	616	1,127	402	340	214
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	28,152	2,401	20,995	1,471	7,157	930
MATHEMATICIANS	22,418	1,566	16,714	942	5,704	624
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	5,734	833	4,281	527	1,453	306
LIFE SCIENTISTS, TOTAL	108,416	30,907	71,218	19,086	37,198	11,821
AGRICULTURAL SCIENTISTS	14,260	4,682	13,582	4,424	678	258
BIOLOGICAL SCIENTISTS	40,404	12,145	26,571	7,312	13,833	4,833
MEDICAL SCIENTISTS	53,752	14,079	31,065	7,350	22,687	6,729
PSYCHOLOGISTS	20,132	2,006	14,033	1,263	6,099	743
SOCIAL SCIENTISTS, TOTAL	47,157	4,772	33,028	3,320	14,129	1,452
ECONOMISTS	12,234	1,614	8,161	1,230	4,073	384
SOCIOLOGISTS	13,118	1,076	9,143	761	3,975	315
POLITICAL SCIENTISTS	10,109	733	6,642	432	3,467	301
OTHER SOCIAL SCIENTISTS	11,696	1,346	9,082	895	2,614	451

[1] FOR EXPLANATION OF DIFFERENCES BETWEEN DATA ON FTE INVOLVEMENT IN R&D ACTIVITIES SHOWN IN TABLES B-20, B-50, and B-51, SEE PAGE 1 OF THE TECHNICAL NOTES.

NOTE: DETAILS MAY NOT ADD TO TOTALS BECAUSE OF ROUNDING.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-51. FULL-TIME EQUIVALENT SCIENTISTS AND ENGINEERS EMPLOYED IN UNIVERSITIES AND COLLEGES, BY FIELD, TYPE OF INSTITUTION, AND PRIMARY FUNCTION: JANUARY 1978

FIELD	TOTAL		INSTITUTIONS GRANTING:								2-YEAR INSTITUTIONS	
	TOTAL FTE	R&D FTE 1/	DOCTORATE IN S&E		MASTER'S IN S&E		BACHELOR'S IN S&E		OTHER DEGREES		TOTAL FTE	R&D FTE
			TOTAL FTE	R&D FTE	TOTAL FTE	R&D FTE	TOTAL FTE	R&D FTE	TOTAL FTE	R&D FTE		
TOTAL	270,741	55,164	180,002	53,234	33,457	1,322	23,687	545	467	2	33,128	61
ENGINEERS, TOTAL	27,507	5,841	20,033	5,681	2,161	100	1,415	55	8	0	3,890	5
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	1,028	288	782	277	37	3	99	8	0	0	110	0
CHEMICAL ENGINEERS	1,879	455	1,659	452	107	3	30	0	0	0	83	0
CIVIL ENGINEERS	4,691	693	3,305	675	477	11	223	6	0	0	686	1
ELECTRICAL ENGINEERS	6,281	1,337	4,140	1,281	597	36	373	20	3	0	1,168	0
MECHANICAL ENGINEERS	5,033	820	3,352	788	512	20	304	8	4	0	861	4
OTHER ENGINEERS	8,595	2,246	6,795	2,207	431	27	386	12	1	0	982	0
PHYSICAL SCIENTISTS, TOTAL	30,547	6,875	17,316	6,517	4,794	240	3,978	115	49	1	4,410	2
CHEMISTS	16,367	3,231	8,615	3,004	2,762	156	2,460	68	23	1	2,507	2
PHYSICISTS	12,076	2,743	7,337	2,619	1,823	78	1,399	46	21	0	1,496	0
OTHER PHYSICAL SCIENTISTS	2,104	901	1,364	893	209	7	119	1	5	0	407	0
ENVIRONMENTAL SCIENTISTS, TOTAL	8,830	2,362	6,071	2,269	1,305	75	610	17	11	0	833	1
EARTH SCIENTISTS	6,482	1,328	4,006	1,261	1,182	51	547	15	11	0	736	1
ATMOSPHERIC SCIENTISTS	881	420	768	415	61	4	19	1	0	0	33	0
OCEANOGRAPHERS	1,467	616	1,297	592	62	21	44	3	0	0	64	0
MATHEMATICAL AND COMPUTER SCIENTISTS, TOTAL	28,152	2,401	12,087	2,181	5,189	151	3,806	55	119	0	6,951	14
MATHEMATICIANS	22,418	1,566	9,272	1,428	4,231	93	3,208	40	93	0	5,614	5
COMPUTER SCIENTISTS (EXCLUDING PROGRAMMERS)	5,734	833	2,815	751	958	58	598	15	26	0	1,337	9
LIFE SCIENTISTS, TOTAL	108,416	30,907	91,029	30,335	6,142	404	4,436	155	52	1	6,757	12
AGRICULTURAL SCIENTISTS	14,260	4,682	12,301	4,588	708	74	237	18	1	0	1,013	2
BIOLOGICAL SCIENTISTS	40,404	12,145	27,827	11,798	4,400	217	3,605	120	51	1	4,521	9
MEDICAL SCIENTISTS	53,752	14,079	50,901	13,949	1,034	114	594	16	0	0	1,223	0
PSYCHOLOGISTS	20,132	2,006	8,855	1,838	4,628	98	2,864	56	64	0	3,721	14
SOCIAL SCIENTISTS, TOTAL	47,157	4,772	24,611	4,413	9,238	254	6,578	92	164	0	6,566	13
ECONOMISTS	12,234	1,614	6,827	1,532	2,320	53	1,772	27	66	0	1,249	2
SOCIOLOGISTS	13,118	1,076	5,890	969	2,834	72	2,242	34	45	0	2,107	1
POLITICAL SCIENTISTS	10,109	733	4,790	656	2,180	47	1,654	26	36	0	1,449	4
OTHER SOCIAL SCIENTISTS	11,696	1,346	7,104	1,256	1,904	79	910	5	17	0	1,761	6

1/ FOR EXPLANATION OF DIFFERENCES BETWEEN DATA ON FTE INVOLVEMENT IN R&D ACTIVITIES SHOWN IN TABLES B-20, B-50, and B-51, SEE PAGE 1 OF THE TECHNICAL NOTES.

NOTE: DETAILS MAY NOT ADD TO TOTALS BECAUSE OF ROUNDING.

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-52. TECHNICIANS EMPLOYED IN THE SCIENCES AND ENGINEERING AT UNIVERSITIES AND COLLEGES BY FIELD AND PRIMARY FUNCTION: JANUARY 1977 AND JANUARY 1978

FIELD	TOTAL		RESEARCH & DEVELOPMENT		OTHER ACTIVITIES	
	1977	1978	1977	1978	1977	1978
TOTAL	55,369	57,542	36,316	37,865	19,053	19,677
ENGINEERING TECHNICIANS	5,483	5,818	2,966	3,166	2,517	2,652
PHYSICAL SCIENCE TECHNICIANS	5,382	5,372	3,123	3,090	2,259	2,282
ENVIRONMENTAL SCIENCE TECHNICIANS .	1,912	1,983	1,474	1,577	438	406
MATHEMATICS AND COMPUTER TECHNICIANS	4,806	5,240	1,513	1,620	3,293	3,620
LIFE SCIENCE TECHNICIANS	35,355	36,712	25,789	27,037	9,566	9,675
PSYCHOLOGY TECHNICIANS	1,244	1,121	818	705	426	416
SOCIAL SCIENCE TECHNICIANS	1,187	1,296	633	670	554	626

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-53. TECHNICIANS EMPLOYED IN THE SCIENCES AND ENGINEERING AT UNIVERSITIES AND COLLEGES BY FIELD AND TYPE OF INSTITUTION: JANUARY 1978

FIELD	TOTAL	INSTITUTIONS GRANTING:				2-YEAR INSTITUTIONS
		DOCTORATE IN S&E	MASTER'S IN S&E	BACHELOR'S IN S&E	OTHER DEGREES	
TOTAL	57,542	51,250	2,503	1,407	21	2,361
ENGINEERING TECHNICIANS	5,818	4,706	337	241	1	533
PHYSICAL SCIENCE TECHNICIANS	5,372	4,244	501	280	5	342
ENVIRONMENTAL SCIENCE TECHNICIANS .	1,983	1,816	81	37	2	47
MATHEMATICS AND COMPUTER TECHNICIANS	5,240	3,522	625	380	10	703
LIFE SCIENCE TECHNICIANS	36,712	34,966	758	376	2	610
PSYCHOLOGY TECHNICIANS	1,121	887	137	45	1	51
SOCIAL SCIENCE TECHNICIANS	1,296	1,109	64	48	0	75

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-54. SUMMARY DATA FOR 2166 UNIVERSITIES AND COLLEGES: JANUARY 1978

ITEM 1. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	24601	13864	4758	979
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	965	721	236	8
CHEMICAL ENGINEERS	1726	1308	364	54
CIVIL ENGINEERS	4192	3623	465	104
ELECTRICAL ENGINEERS	5594	4431	1027	136
MECHANICAL ENGINEERS	4543	3804	572	167
OTHER ENGINEERS	7581	4977	2094	510
PHYSICAL SCIENTISTS, TOTAL	27861	21289	6031	541
CHEMISTS	14718	11648	2765	305
PHYSICISTS	11271	3667	2411	193
OTHER PHYSICAL SCIENTISTS	1872	974	855	43
ENVIRONMENTAL SCIENTISTS, TOTAL	8109	5462	2469	178
EARTH SCIENTISTS	5920	4614	1184	122
ATMOSPHERIC SCIENTISTS	801	375	411	15
OCEANOGRAPHERS	1388	473	874	41
MATHEMATICAL SCIENTISTS, TOTAL	24317	21821	1546	950
MATHEMATICIANS	19533	18476	847	210
COMPUTER SCIENTISTS	4784	3345	699	740
LIFE SCIENTISTS, TOTAL	97238	59909	27851	9478
AGRICULTURAL SCIENTISTS	13594	5242	4210	4142
BIOLOGICAL SCIENTISTS	37438	25110	11242	1086
MEDICAL SCIENTISTS	46206	29557	12399	4250
PSYCHOLOGISTS, TOTAL	17362	14617	1290	1455
SOCIAL SCIENTISTS, TOTAL	41611	36837	3212	1562
ECONOMISTS	10760	9092	1173	495
SOCIOLOGISTS	11448	10513	671	264
POLITICAL SCIENTISTS	9028	8401	415	212
OTHER SOCIAL SCIENTISTS	10375	8831	953	591
TOTAL HEADCOUNT	241099	178799	47157	15143
FTE DISTRIBUTION, BY FUNCTION	241099	170450	53593	17056

ITEM 2. FULL-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	135163	104174	26264	4725
ED.D., J.D., ETC.	3319	2902	193	224
M.D., D.D.S., D.V.M., ETC.	31586	21471	7141	2974
MASTER'S	54194	43443	6491	4260
BACHELOR'S OR EQUIVALENT	16837	6809	7068	2960
TOTAL	241099	178799	47157	15143

ITEM 3. PART-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	6299	5422	815	62
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	168	136	32	0
CHEMICAL ENGINEERS	278	219	54	5
CIVIL ENGINEERS	1108	1047	53	8
ELECTRICAL ENGINEERS	1598	1453	134	11
MECHANICAL ENGINEERS	1117	1009	100	8
OTHER ENGINEERS	2030	1558	442	30
PHYSICAL SCIENTISTS, TOTAL	4933	4059	831	43
CHEMISTS	2929	2425	482	22
PHYSICISTS	1519	1245	256	18
OTHER PHYSICAL SCIENTISTS	485	389	93	3
ENVIRONMENTAL SCIENTISTS, TOTAL	1319	989	311	19
EARTH SCIENTISTS	1020	826	179	15
ATMOSPHERIC SCIENTISTS	141	81	59	1
OCEANOGRAPHERS	158	82	73	3
MATHEMATICAL SCIENTISTS, TOTAL	8630	8366	186	78
MATHEMATICIANS	6370	6244	100	26
COMPUTER SCIENTISTS	2260	2122	86	52
LIFE SCIENTISTS, TOTAL	25284	20131	4028	1125
AGRICULTURAL SCIENTISTS	1331	902	345	84
BIOLOGICAL SCIENTISTS	5920	4559	1282	79
MEDICAL SCIENTISTS	18033	14670	2401	962
PSYCHOLOGISTS, TOTAL	6358	5805	358	195
SOCIAL SCIENTISTS, TOTAL	12625	11789	646	190
ECONOMISTS	3210	3040	131	39
SOCIOLOGISTS	3868	3679	163	26
POLITICAL SCIENTISTS	2292	2122	99	71
OTHER SOCIAL SCIENTISTS	3255	2948	253	54
TOTAL HEADCOUNT	65448	56561	7175	1712
FTE DISTRIBUTION, BY FUNCTION	25152	20836	3530	786

ITEM 4. PART-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	16270	12966	2895	409
ED.D., J.D., ETC.	692	628	46	18
M.D., D.D.S., D.V.M., ETC.	15189	12889	1522	778
MASTER'S	24508	22770	1418	320
BACHELOR'S OR EQUIVALENT	8789	7308	1294	187
TOTAL	65448	56561	7175	1712

TABLE B-54 CONTINUED. SUMMARY DATA FOR 2166 UNIVERSITIES AND COLLEGES: JANUARY 1978

ITEM 5. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	MEN	WOMEN
ENGINEERS, TOTAL	24601	24008	593
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	965	947	18
CHEMICAL ENGINEERS	1726	1694	32
CIVIL ENGINEERS	4192	4067	125
ELECTRICAL ENGINEERS	5594	5502	92
MECHANICAL ENGINEERS	4543	4482	61
OTHER ENGINEERS	7581	7316	265
PHYSICAL SCIENTISTS, TOTAL	27861	25418	2443
CHEMISTS	14711	12987	1724
PHYSICISTS	11272	10794	478
OTHER PHYSICAL SCIENTISTS	1878	1637	241
ENVIRONMENTAL SCIENTISTS, TOTAL	8109	7549	560
EARTH SCIENTISTS	5920	5516	404
ATMOSPHERIC SCIENTISTS	801	766	35
OCEANOGRAPHERS	1388	1267	121
MATHEMATICAL SCIENTISTS, TOTAL	24317	20854	3463
MATHEMATICIANS	19545	16640	2905
COMPUTER SCIENTISTS	4772	4214	558
LIFE SCIENTISTS, TOTAL	97238	77467	19771
AGRICULTURAL SCIENTISTS	13594	12375	1219
BIOLOGICAL SCIENTISTS	37442	29675	7767
MEDICAL SCIENTISTS	46202	35417	10785
PSYCHOLOGISTS, TOTAL	17362	13061	4301
SOCIAL SCIENTISTS, TOTAL	41611	34056	7555
ECONOMISTS	10761	9797	964
SOCIOLOGISTS	11449	8430	3019
POLITICAL SCIENTISTS	9026	7950	1076
OTHER SOCIAL SCIENTISTS	10375	7879	2496
TOTAL HEADCOUNT	241099	202413	38686

ITEM 6. SCIENTISTS AND ENGINEERS BY FIELD AND EMPLOYMENT STATUS, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FIELD: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	FULL-TIME	PART-TIME	TOTAL FTE'S	% TOTAL FTE'S DEVOTED TO R&D	FTE'S DEVOTED TO R&D
ENGINEERS, TOTAL	30900	24601	6299	27507	21.2	5841.2
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	1133	965	168	1028	28.1	288.8
CHEMICAL ENGINEERS	2004	1726	278	1879	24.2	454.7
CIVIL ENGINEERS	5300	4192	1108	4691	14.8	693.2
ELECTRICAL ENGINEERS	7192	5594	1598	6281	21.3	1338.0
MECHANICAL ENGINEERS	5660	4543	1117	5033	16.3	820.4
OTHER ENGINEERS	9611	7581	2030	8595	26.1	2246.0
PHYSICAL SCIENTISTS, TOTAL	32794	27861	4933	30547	22.5	6875.5
CHEMISTS	17647	14718	2929	16367	19.7	3230.6
PHYSICISTS	12790	11271	1519	12076	22.7	2742.7
OTHER PHYSICAL SCIENTISTS	2357	1872	485	2104	42.9	902.2
ENVIRONMENTAL SCIENTISTS, TOTAL	9428	8109	1319	8830	26.8	2362.8
EARTH SCIENTISTS	6940	5920	1020	6482	20.5	1327.2
ATMOSPHERIC SCIENTISTS	942	801	141	881	47.7	420.4
OCEANOGRAPHERS	1546	1388	158	1467	41.9	615.2
MATHEMATICAL SCIENTISTS, TOTAL	32947	24317	8630	28152	8.5	2400.7
MATHEMATICIANS	25903	19533	6370	22418	7.0	1567.0
COMPUTER SCIENTISTS	7044	4784	2260	5734	14.5	833.6
LIFE SCIENTISTS, TOTAL	122522	97238	25284	108416	28.5	30906.4
AGRICULTURAL SCIENTISTS	14925	13594	1331	14260	32.8	4682.0
BIOLOGICAL SCIENTISTS	43358	37438	5920	40404	30.1	12144.9
MEDICAL SCIENTISTS	64239	46206	18033	53752	26.2	14079.6
PSYCHOLOGISTS, TOTAL	23720	17362	6358	20132	10.0	2006.3
SOCIAL SCIENTISTS, TOTAL	54236	41611	12625	47157	10.1	4770.3
ECONOMISTS	13970	10760	3210	12234	13.2	1613.4
SOCIOLOGISTS	15316	11448	3868	13118	8.2	1076.4
POLITICAL SCIENTISTS	11320	9028	2292	10109	7.3	733.2
OTHER SOCIAL SCIENTISTS	13630	10375	3255	11696	11.5	1347.4
TOTAL HEADCOUNT	306547	241099	65448	270741	20.4	55163.2

ITEM 7. TECHNICIANS BY FIELD AND PRIMARY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	R&D	OTHER
ENGINEERING TECHNICIANS	5818	3166	2652
PHYSICAL SCIENCE TECHNICIANS	5372	3090	2282
ENVIRONMENTAL SCIENCE TECHNICIANS	1983	1577	406
MATHEMATICAL & COMPUTER SCIENCE TECHNICIANS	5240	1620	3620
LIFE SCIENCE TECHNICIANS	36712	27037	9675
PSYCHOLOGY TECHNICIANS	1121	705	416
SOCIAL SCIENCE TECHNICIANS	1296	670	626
TOTAL	57542	37865	19677

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-55. SUMMARY DATA FOR 1167 PUBLIC UNIVERSITIES AND COLLEGES: JANUARY 1978

ITEM 1. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	18391	14763	2812	816
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	623	544	73	6
CHEMICAL ENGINEERS	1178	923	214	41
CIVIL ENGINEERS	3349	2927	333	89
ELECTRICAL ENGINEERS	3927	3329	502	96
MECHANICAL ENGINEERS	3366	2923	305	138
OTHER ENGINEERS	5948	4117	1385	446
PHYSICAL SCIENTISTS, TOTAL	18314	14703	3221	390
CHEMISTS	9573	7987	1370	216
PHYSICISTS	7294	5984	1171	139
OTHER PHYSICAL SCIENTISTS	1447	732	680	35
ENVIRONMENTAL SCIENTISTS, TOTAL	6424	4495	1772	157
EARTH SCIENTISTS	4722	3772	837	113
ATMOSPHERIC SCIENTISTS	637	321	306	10
OCEANOGRAPHERS	1065	402	629	34
MATHEMATICAL SCIENTISTS, TOTAL	18197	16589	855	753
MATHEMATICIANS	14562	13982	428	152
COMPUTER SCIENTISTS	3635	2607	427	601
LIFE SCIENTISTS, TOTAL	65160	41770	16044	7346
AGRICULTURAL SCIENTISTS	12944	4958	3972	4014
BIOLOGICAL SCIENTISTS	24670	17722	6121	827
MEDICAL SCIENTISTS	27546	19090	5951	2505
PSYCHOLOGISTS, TOTAL	12299	10395	797	1107
SOCIAL SCIENTISTS, TOTAL	29580	26066	2301	1213
ECONOMISTS	7308	5971	935	402
SOCIOLOGISTS	8081	7440	477	164
POLITICAL SCIENTISTS	6019	5620	253	146
OTHER SOCIAL SCIENTISTS	8172	7035	636	501
TOTAL HEADCOUNT	168365	128781	27802	11782
FTE DISTRIBUTION, BY FUNCTION	168365	122181	32956	13228

ITEM 2. FULL-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	92723	73344	15599	3780
ED.D., J.D., ETC.	2726	2409	124	193
M.D., D.D.S., D.V.M., ETC.	16378	12224	2612	1542
MASTER'S	43497	35215	4630	3652
BACHELOR'S OR EQUIVALENT	13041	5589	4837	2615
TOTAL	168365	128781	27802	11782

ITEM 3. PART-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	4501	3933	539	29
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	118	106	12	0
CHEMICAL ENGINEERS	183	143	38	2
CIVIL ENGINEERS	817	782	34	1
ELECTRICAL ENGINEERS	1067	1011	51	5
MECHANICAL ENGINEERS	762	696	63	3
OTHER ENGINEERS	1554	1195	341	18
PHYSICAL SCIENTISTS, TOTAL	3422	2770	626	26
CHEMISTS	2080	1686	383	11
PHYSICISTS	972	791	168	13
OTHER PHYSICAL SCIENTISTS	370	293	75	2
ENVIRONMENTAL SCIENTISTS, TOTAL	1008	727	266	15
EARTH SCIENTISTS	763	598	153	12
ATMOSPHERIC SCIENTISTS	118	65	52	1
OCEANOGRAPHERS	127	64	61	2
MATHEMATICAL SCIENTISTS, TOTAL	6369	6248	85	36
MATHEMATICIANS	4831	4772	44	15
COMPUTER SCIENTISTS	1538	1476	41	21
LIFE SCIENTISTS, TOTAL	14313	11065	2448	800
AGRICULTURAL SCIENTISTS	1265	843	338	84
BIOLOGICAL SCIENTISTS	3850	2938	856	56
MEDICAL SCIENTISTS	9198	7284	1254	660
PSYCHOLOGISTS, TOTAL	3989	3608	259	122
SOCIAL SCIENTISTS, TOTAL	7909	7365	464	80
ECONOMISTS	1803	1681	98	24
SOCIOLOGISTS	2440	2300	121	19
POLITICAL SCIENTISTS	1327	1250	64	13
OTHER SOCIAL SCIENTISTS	2339	2134	181	24
TOTAL HEADCOUNT	41511	35716	4687	1108
FTE DISTRIBUTION, BY FUNCTION	15998	12880	2589	529

ITEM 4. PART-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	9307	7064	1990	253
ED.D., J.D., ETC.	476	432	31	13
M.D., D.D.S., D.V.M., ETC.	7384	6091	773	520
MASTER'S	17385	16233	975	177
BACHELOR'S OR EQUIVALENT	6959	5896	918	145
TOTAL	41511	35716	4687	1108

TABLE 8-55 CONTINUED. SUMMARY DATA FOR 1167 PUBLIC UNIVERSITIES AND COLLEGES: JANUARY 1978

ITEM 5. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	MEN	WOMEN
ENGINEERS, TOTAL	18391	17985	406
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	623	613	10
CHEMICAL ENGINEERS	1178	1158	20
CIVIL ENGINEERS	3349	3261	88
ELECTRICAL ENGINEERS	3927	3863	64
MECHANICAL ENGINEERS	3366	3318	48
OTHER ENGINEERS	5948	5772	176
PHYSICAL SCIENTISTS, TOTAL	18314	16813	1501
CHEMISTS	9573	8522	1051
PHYSICISTS	7294	7012	282
OTHER PHYSICAL SCIENTISTS	1447	1279	168
ENVIRONMENTAL SCIENTISTS, TOTAL	6424	6018	406
EARTH SCIENTISTS	4722	4435	287
ATMOSPHERIC SCIENTISTS	637	610	27
OCEANOGRAPHERS	1065	973	92
MATHEMATICAL SCIENTISTS, TOTAL	18197	15618	2579
MATHEMATICIANS	14574	12421	2153
COMPUTER SCIENTISTS	3623	3197	426
LIFE SCIENTISTS, TOTAL	65160	52195	12965
AGRICULTURAL SCIENTISTS	12944	11788	1156
BIOLOGICAL SCIENTISTS	24674	19870	4804
MEDICAL SCIENTISTS	27542	20537	7005
PSYCHOLOGISTS, TOTAL	12299	9298	3001
SOCIAL SCIENTISTS, TOTAL	29580	24294	5286
ECONOMISTS	7308	6679	629
SOCIOLOGISTS	8081	6052	2029
POLITICAL SCIENTISTS	6019	5326	691
OTHER SOCIAL SCIENTISTS	8172	6235	1937
TOTAL HEADCOUNT	168365	142221	26144

ITEM 6. SCIENTISTS AND ENGINEERS BY FIELD AND EMPLOYMENT STATUS, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FIELD: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	FULL-TIME	PART-TIME	TOTAL FTE'S	% TOTAL FTE'S DEVOTED TO R&D	FTE'S DEVOTED TO R&D
ENGINEERS, TOTAL	22892	18391	4501	20468	17.9	3660.2
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	741	623	118	660	17.7	116.8
CHEMICAL ENGINEERS	1361	1178	183	1269	22.3	283.4
CIVIL ENGINEERS	4166	3349	817	3703	13.6	504.6
ELECTRICAL ENGINEERS	4994	3927	1067	4408	17.3	761.2
MECHANICAL ENGINEERS	4128	3366	762	3696	13.3	492.9
OTHER ENGINEERS	7502	5948	1554	6732	22.3	1501.4
PHYSICAL SCIENTISTS, TOTAL	21736	18314	3422	20204	19.4	3917.0
CHEMISTS	11653	9573	2080	10772	16.9	1817.3
PHYSICISTS	8266	7294	972	7813	18.3	1432.9
OTHER PHYSICAL SCIENTISTS	1817	1447	370	1619	41.2	666.8
ENVIRONMENTAL SCIENTISTS, TOTAL	7432	6424	1008	6967	26.0	1809.8
EARTH SCIENTISTS	5485	4722	763	5138	20.3	1041.4
ATMOSPHERIC SCIENTISTS	755	637	118	702	52.2	366.5
OCEANOGRAPHERS	1192	1065	127	1127	35.7	401.8
MATHEMATICAL SCIENTISTS, TOTAL	24566	18197	6369	20995	7.0	1471.1
MATHEMATICIANS	19393	14562	4831	16714	5.6	943.1
COMPUTER SCIENTISTS	5173	3635	1538	4281	12.3	528.0
LIFE SCIENTISTS, TOTAL	79473	65160	14313	71218	26.8	19086.5
AGRICULTURAL SCIENTISTS	14209	12944	1265	13582	32.6	4424.2
BIOLOGICAL SCIENTISTS	28520	24670	3850	26571	27.5	7311.9
MEDICAL SCIENTISTS	36744	27546	9198	31065	23.7	7350.4
PSYCHOLOGISTS, TOTAL	16288	12299	3989	14033	9.0	1262.7
SOCIAL SCIENTISTS, TOTAL	37489	29580	7909	33028	10.1	3319.4
ECONOMISTS	9111	7308	1803	8161	15.1	1229.7
SOCIOLOGISTS	10521	8081	2440	9143	8.3	761.3
POLITICAL SCIENTISTS	7346	6019	1327	6642	6.5	432.4
OTHER SOCIAL SCIENTISTS	10511	8172	2339	9082	9.9	896.0
TOTAL HEADCOUNT	209876	168365	41511	166913	18.5	35526.7

ITEM 7. TECHNICIANS BY FIELD AND PRIMARY FUNCTION: JANUARY 1976

FIELD OF EMPLOYMENT	TOTAL	R&D	OTHER
ENGINEERING TECHNICIANS	4311	2069	2242
PHYSICAL SCIENCE TECHNICIANS	3915	2049	1866
ENVIRONMENTAL SCIENCE TECHNICIANS	1584	1236	348
MATHEMATICAL & COMPUTER SCIENCE TECHNICIANS	4043	1018	3025
LIFE SCIENCE TECHNICIANS	24049	16564	7485
PSYCHOLOGY TECHNICIANS	771	418	353
SOCIAL SCIENCE TECHNICIANS	1026	456	570
TOTAL	39699	23810	15889

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-56. SUMMARY DATA FOR 999 PRIVATE UNIVERSITIES AND COLLEGES: JANUARY 1978

ITEM 1. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1976

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	6210	4101	1946	163
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	342	177	163	2
CHEMICAL ENGINEERS	548	385	150	13
CIVIL ENGINEERS	843	696	132	15
ELECTRICAL ENGINEERS	1667	1102	525	40
MECHANICAL ENGINEERS	1177	881	267	29
OTHER ENGINEERS	1633	860	709	64
PHYSICAL SCIENTISTS, TOTAL	9547	6586	2810	151
CHEMISTS	5145	3661	1395	89
PHYSICISTS	3977	2683	1240	54
OTHER PHYSICAL SCIENTISTS	425	242	175	8
ENVIRONMENTAL SCIENTISTS, TOTAL	1685	967	697	21
EARTH SCIENTISTS	1198	842	347	9
ATMOSPHERIC SCIENTISTS	164	54	105	5
OCEANOGRAPHERS	323	71	245	7
MATHEMATICAL SCIENTISTS, TOTAL	6120	5232	691	197
MATHEMATICIANS	4971	4494	419	58
COMPUTER SCIENTISTS	1149	738	272	139
LIFE SCIENTISTS, TOTAL	32078	18139	11807	2132
AGRICULTURAL SCIENTISTS	650	284	238	128
BIOLOGICAL SCIENTISTS	12768	7388	5121	259
MEDICAL SCIENTISTS	18660	10467	6448	1745
PSYCHOLOGISTS, TOTAL	5063	4222	493	348
SOCIAL SCIENTISTS, TOTAL	12031	10771	911	349
ECONOMISTS	3452	3121	238	93
SOCIOLOGISTS	3367	3073	194	100
POLITICAL SCIENTISTS	3009	2781	162	66
OTHER SOCIAL SCIENTISTS	2203	1796	317	90
TOTAL HEADCOUNT	72734	50018	19355	3361
FTE DISTRIBUTION, BY FUNCTION	72734	48269	20637	3828

ITEM 2. FULL-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1976

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	42440	30830	10665	945
ED.D., J.D., ETC.	593	493	69	31
M.D., D.D.S., D.V.M., ETC.	15208	9247	4529	1432
MASTER'S	10697	8228	1861	608
BACHELOR'S OR EQUIVALENT	3796	1220	2231	345
TOTAL	72734	50018	19355	3361

ITEM 3. PART-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1976

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	1798	1489	276	33
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	50	30	20	0
CHEMICAL ENGINEERS	95	76	16	3
CIVIL ENGINEERS	291	265	19	7
ELECTRICAL ENGINEERS	531	442	83	6
MECHANICAL ENGINEERS	355	313	37	5
OTHER ENGINEERS	476	363	101	12
PHYSICAL SCIENTISTS, TOTAL	1511	1289	205	17
CHEMISTS	849	739	99	11
PHYSICISTS	547	454	88	5
OTHER PHYSICAL SCIENTISTS	115	96	18	1
ENVIRONMENTAL SCIENTISTS, TOTAL	311	262	45	4
EARTH SCIENTISTS	257	228	26	3
ATMOSPHERIC SCIENTISTS	23	16	7	0
OCEANOGRAPHERS	31	18	12	1
MATHEMATICAL SCIENTISTS, TOTAL	2261	2118	101	42
MATHEMATICIANS	1539	1472	56	11
COMPUTER SCIENTISTS	722	646	45	31
LIFE SCIENTISTS, TOTAL	10971	9066	1580	325
AGRICULTURAL SCIENTISTS	66	59	7	0
BIOLOGICAL SCIENTISTS	2070	1621	426	23
MEDICAL SCIENTISTS	8835	7386	1147	302
PSYCHOLOGISTS, TOTAL	2369	2197	99	73
SOCIAL SCIENTISTS, TOTAL	4716	4424	182	110
ECONOMISTS	1407	1359	33	15
SOCIOLOGISTS	1428	1379	42	7
POLITICAL SCIENTISTS	965	872	35	58
OTHER SOCIAL SCIENTISTS	916	814	72	30
TOTAL HEADCOUNT	23937	20845	2488	604
FTE DISTRIBUTION, BY FUNCTION	9154	7956	941	257

ITEM 4. PART-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	6963	5902	905	156
ED.D., J.D., ETC.	216	196	15	5
M.D., D.D.S., D.V.M., ETC.	7805	6798	749	258
MASTER'S	7123	6537	443	143
BACHELOR'S OR EQUIVALENT	1830	1412	376	42
TOTAL	23937	20845	2488	604

TABLE 6-56 CONTINUED. SUMMARY DATA FOR 999 PRIVATE UNIVERSITIES AND COLLEGES: JANUARY 1978

ITEM 5. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	MEN	WOMEN
ENGINEERS, TOTAL	6210	6023	187
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	342	334	8
CHEMICAL ENGINEERS	548	536	12
CIVIL ENGINEERS	843	806	37
ELECTRICAL ENGINEERS	1667	1639	28
MECHANICAL ENGINEERS	1177	1164	13
OTHER ENGINEERS	1633	1544	89
PHYSICAL SCIENTISTS, TOTAL	9547	8605	942
CHEMISTS	5138	4465	673
PHYSICISTS	3978	3782	196
OTHER PHYSICAL SCIENTISTS	431	358	73
ENVIRONMENTAL SCIENTISTS, TOTAL	1685	1531	154
EARTH SCIENTISTS	1198	1081	117
ATMOSPHERIC SCIENTISTS	164	156	8
OCEANOGRAPHERS	323	294	29
MATHEMATICAL SCIENTISTS, TOTAL	6120	5236	884
MATHEMATICIANS	4971	4219	752
COMPUTER SCIENTISTS	1149	1017	132
LIFE SCIENTISTS, TOTAL	32078	25272	6806
AGRICULTURAL SCIENTISTS	650	587	63
BIOLOGICAL SCIENTISTS	12768	9805	2963
MEDICAL SCIENTISTS	18660	14880	3780
PSYCHOLOGISTS, TOTAL	5063	3763	1300
SOCIAL SCIENTISTS, TOTAL	12031	9762	2269
ECONOMISTS	3453	3118	335
SOCIOLOGISTS	3368	2378	990
POLITICAL SCIENTISTS	3007	2622	385
OTHER SOCIAL SCIENTISTS	2203	1644	559
TOTAL HEADCOUNT	72734	60192	12542

ITEM 6. SCIENTISTS AND ENGINEERS BY FIELD AND EMPLOYMENT STATUS, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FIELD: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	FULL-TIME	PART-TIME	TOTAL FTE'S	% TOTAL FTE'S DEVOTED TO R&D	FTE'S DEVOTED TO R&D
ENGINEERS, TOTAL	8008	6210	1798	7039	31.0	2181.0
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	392	342	50	368	46.8	172.1
CHEMICAL ENGINEERS	643	548	95	610	28.1	171.3
CIVIL ENGINEERS	1134	843	291	988	19.1	188.7
ELECTRICAL ENGINEERS	2198	1667	531	1873	30.8	576.9
MECHANICAL ENGINEERS	1532	1177	355	1337	24.5	327.5
OTHER ENGINEERS	2109	1633	476	1863	40.0	744.6
PHYSICAL SCIENTISTS, TOTAL	11058	9547	1511	10343	28.6	2958.5
CHEMISTS	5994	5145	849	5595	25.3	1413.2
PHYSICISTS	4524	3977	547	4263	30.7	1309.9
OTHER PHYSICAL SCIENTISTS	540	425	115	485	48.5	235.4
ENVIRONMENTAL SCIENTISTS, TOTAL	1996	1685	311	1863	29.7	553.0
EARTH SCIENTISTS	1455	1198	257	1344	21.3	285.7
ATMOSPHERIC SCIENTISTS	187	164	23	179	30.1	53.9
OCEANOGRAPHERS	354	323	31	343	62.8	213.4
MATHEMATICAL SCIENTISTS, TOTAL	8381	6120	2261	7157	13.0	929.5
MATHEMATICIANS	6510	4971	1539	5704	10.9	623.9
COMPUTER SCIENTISTS	1871	1149	722	1453	21.0	305.6
LIFE SCIENTISTS, TOTAL	43049	32078	10971	37198	31.8	11819.9
AGRICULTURAL SCIENTISTS	716	650	66	678	38.0	257.8
BIOLOGICAL SCIENTISTS	14838	12768	2070	13933	34.9	4833.0
MEDICAL SCIENTISTS	27495	18660	8835	22687	29.7	6729.2
PSYCHOLOGISTS, TOTAL	7432	5063	2369	6099	12.2	743.5
SOCIAL SCIENTISTS, TOTAL	16747	12031	4716	14129	10.3	1450.9
ECONOMISTS	4859	3452	1407	4073	9.4	383.7
SOCIOLOGISTS	4795	3367	1428	3975	7.9	315.1
POLITICAL SCIENTISTS	3974	3009	965	3467	8.7	300.8
OTHER SOCIAL SCIENTISTS	3119	2203	916	2614	17.3	451.4
TOTAL HEADCOUNT	96671	72734	23937	83828	24.6	20636.3

ITEM 7. TECHNICIANS BY FIELD AND PRIMARY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	R&D	OTHER
ENGINEERING TECHNICIANS	1507	1097	410
PHYSICAL SCIENCE TECHNICIANS	1457	1041	416
ENVIRONMENTAL SCIENCE TECHNICIANS	399	341	58
MATHEMATICAL & COMPUTER SCIENCE TECHNICIANS	1197	602	595
LIFE SCIENCE TECHNICIANS	12663	10473	2190
PSYCHOLOGY TECHNICIANS	350	287	63
SOCIAL SCIENCE TECHNICIANS	270	214	56
TOTAL	17843	14055	3788

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-57. SUMMARY DATA FOR 297 INSTITUTIONS AWARDING DOCTORATE DEGREES IN THE SCIENCES OR ENGINEERING: JANUARY 1978

ITEM 1. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	18386	12930	4668	788
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	748	508	234	6
CHEMICAL ENGINEERS	1537	1129	359	49
CIVIL ENGINEERS	3043	2526	456	61
ELECTRICAL ENGINEERS	3841	2746	995	100
MECHANICAL ENGINEERS	3115	2440	555	120
OTHER ENGINEERS	6102	3581	2069	452
PHYSICAL SCIENTISTS, TOTAL	16152	9980	5820	352
CHEMISTS	7913	5062	2654	197
PHYSICISTS	6978	4521	2327	130
OTHER PHYSICAL SCIENTISTS	1261	397	839	25
ENVIRONMENTAL SCIENTISTS, TOTAL	5693	3127	2413	153
EARTH SCIENTISTS	3740	2490	1146	104
ATMOSPHERIC SCIENTISTS	712	293	408	11
OCEANOGRAPHERS	1241	344	859	38
MATHEMATICAL SCIENTISTS, TOTAL	11116	9091	1436	589
MATHEMATICIANS	8562	7638	803	121
COMPUTER SCIENTISTS	2554	1453	633	468
LIFE SCIENTISTS, TOTAL	81969	45302	27443	9224
AGRICULTURAL SCIENTISTS	11874	3711	4094	4069
BIOLOGICAL SCIENTISTS	26283	14255	11060	968
MEDICAL SCIENTISTS	43812	27336	12289	4187
PSYCHOLOGISTS, TOTAL	7917	6162	1215	540
SOCIAL SCIENTISTS, TOTAL	22516	18238	3005	1273
ECONOMISTS	6293	4727	1121	445
SOCIOLOGISTS	5372	4554	622	196
POLITICAL SCIENTISTS	4387	3848	393	146
OTHER SOCIAL SCIENTISTS	6464	5109	869	486
TOTAL HEADCOUNT	163749	104830	46000	12919
FTE DISTRIBUTION, BY FUNCTION	163749	97245	51854	14650

ITEM 2. FULL-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	97694	68154	25552	3988
ED.D., J.D., ETC.	1123	835	167	121
M.D., D.D.S., D.V.M., ETC.	30619	20577	7107	2935
MASTER'S	21694	12282	6236	3176
BACHELOR'S OR EQUIVALENT	12619	2982	6938	2699
TOTAL	163749	104830	46000	12919

ITEM 3. PART-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	3257	2398	805	54
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	82	53	29	0
CHEMICAL ENGINEERS	215	157	54	4
CIVIL ENGINEERS	546	487	53	6
ELECTRICAL ENGINEERS	689	547	133	9
MECHANICAL ENGINEERS	511	404	100	7
OTHER ENGINEERS	1214	750	436	28
PHYSICAL SCIENTISTS, TOTAL	1979	1155	795	29
CHEMISTS	1138	661	463	14
PHYSICISTS	659	405	241	13
OTHER PHYSICAL SCIENTISTS	182	89	91	2
ENVIRONMENTAL SCIENTISTS, TOTAL	648	322	310	16
EARTH SCIENTISTS	457	266	179	12
ATMOSPHERIC SCIENTISTS	88	28	59	1
OCEANOGRAPHERS	103	28	72	3
MATHEMATICAL SCIENTISTS, TOTAL	2254	2023	174	57
MATHEMATICIANS	1569	1454	94	21
COMPUTER SCIENTISTS	685	569	80	36
LIFE SCIENTISTS, TOTAL	20439	15369	3979	1091
AGRICULTURAL SCIENTISTS	766	345	339	82
BIOLOGICAL SCIENTISTS	3024	1694	1257	73
MEDICAL SCIENTISTS	16649	13330	2383	936
PSYCHOLOGISTS, TOTAL	1972	1522	358	92
SOCIAL SCIENTISTS, TOTAL	4574	3779	630	165
ECONOMISTS	1152	993	128	31
SOCIOLOGISTS	1115	940	156	19
POLITICAL SCIENTISTS	882	721	93	68
OTHER SOCIAL SCIENTISTS	1425	1125	253	47
TOTAL HEADCOUNT	35123	26568	7051	1504
FTE DISTRIBUTION, BY FUNCTION	14368	10218	3459	691

ITEM 4. PART-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	10354	7162	2832	360
ED.D., J.D., ETC.	277	219	45	13
M.D., D.D.S., D.V.M., ETC.	14024	11753	1519	752
MASTER'S	6920	5281	1391	248
BACHELOR'S OR EQUIVALENT	3548	2153	1264	131
TOTAL	35123	26568	7051	1504

TABLE B-57 CONTINUED. SUMMARY DATA FOR 297 INSTITUTIONS AWARDING DOCTORATE DEGREES IN THE SCIENCES OR ENGINEERING: JANUARY 1978

ITEM 5. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	MEN	WOMEN
ENGINEERS, TOTAL	18386	17876	510
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	748	735	13
CHEMICAL ENGINEERS	1537	1506	31
CIVIL ENGINEERS	3043	2933	110
ELECTRICAL ENGINEERS	3841	3763	78
MECHANICAL ENGINEERS	3115	3065	50
OTHER ENGINEERS	6102	5874	228
PHYSICAL SCIENTISTS, TOTAL	16152	14957	1195
CHEMISTS	7906	7154	752
PHYSICISTS	6979	6692	287
OTHER PHYSICAL SCIENTISTS	1267	1111	156
ENVIRONMENTAL SCIENTISTS, TOTAL	5693	5289	404
EARTH SCIENTISTS	3740	3478	262
ATMOSPHERIC SCIENTISTS	712	681	31
OCEANOGRAPHERS	1241	1130	111
MATHEMATICAL SCIENTISTS, TOTAL	11116	9925	1191
MATHEMATICIANS	8562	7663	899
COMPUTER SCIENTISTS	2554	2262	292
LIFE SCIENTISTS, TOTAL	81969	65866	16103
AGRICULTURAL SCIENTISTS	11874	10765	1109
BIOLOGICAL SCIENTISTS	26283	20901	5382
MEDICAL SCIENTISTS	43812	34200	9612
PSYCHOLOGISTS, TOTAL	7917	6147	1770
SOCIAL SCIENTISTS, TOTAL	22516	18492	4024
ECONOMISTS	6293	5767	526
SOCIOLOGISTS	5372	4020	1352
POLITICAL SCIENTISTS	4387	3875	512
OTHER SOCIAL SCIENTISTS	6464	4830	1634
TOTAL HEADCOUNT	163749	138552	25197

ITEM 6. SCIENTISTS AND ENGINEERS BY FIELD AND EMPLOYMENT STATUS, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FIELD: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	FULL-TIME	PART-TIME	TOTAL FTE'S	% TOTAL FTE'S DEVOTED TO R&D	FTE'S DEVOTED TO R&D
ENGINEERS, TOTAL	21643	18386	3257	20033	28.4	5680.8
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	830	748	82	782	35.5	277.4
CHEMICAL ENGINEERS	1752	1537	215	1659	27.2	451.9
CIVIL ENGINEERS	3589	3043	546	3305	20.4	675.1
ELECTRICAL ENGINEERS	4530	3841	689	4140	30.9	1281.1
MECHANICAL ENGINEERS	3626	3115	511	3352	23.5	788.0
OTHER ENGINEERS	7316	6102	1214	6795	32.5	2207.2
PHYSICAL SCIENTISTS, TOTAL	18131	16152	1979	17316	37.6	6517.0
CHEMISTS	9051	7913	1138	8615	34.9	3004.4
PHYSICISTS	7637	6978	659	7337	35.7	2619.5
OTHER PHYSICAL SCIENTISTS	1443	1261	182	1364	65.5	893.2
ENVIRONMENTAL SCIENTISTS, TOTAL	6341	5693	648	6071	37.4	2268.8
EARTH SCIENTISTS	4197	3740	457	4006	31.5	1261.1
ATMOSPHERIC SCIENTISTS	800	712	88	768	54.1	415.8
OCEANOGRAPHERS	1344	1241	103	1297	45.6	592.0
MATHEMATICAL SCIENTISTS, TOTAL	13370	11116	2254	12087	18.0	2180.1
MATHEMATICIANS	10131	8562	1569	9272	15.4	1428.5
COMPUTER SCIENTISTS	3239	2554	685	2815	26.7	751.7
LIFE SCIENTISTS, TOTAL	102408	81969	20439	91029	33.3	30335.3
AGRICULTURAL SCIENTISTS	12640	11874	766	12301	37.3	4587.7
BIOLOGICAL SCIENTISTS	29307	26283	3024	27827	42.4	11798.3
MEDICAL SCIENTISTS	60461	43812	16649	50901	27.4	13949.4
PSYCHOLOGISTS, TOTAL	9889	7917	1972	8855	20.8	1838.2
SOCIAL SCIENTISTS, TOTAL	27090	22516	4574	24611	17.9	4412.9
ECONOMISTS	7445	6293	1152	6827	22.4	1531.3
SOCIOLOGISTS	6487	5372	1115	5890	16.5	969.5
POLITICAL SCIENTISTS	5269	4387	882	4790	13.7	656.2
OTHER SOCIAL SCIENTISTS	7889	6464	1425	7104	17.7	1255.9
TOTAL HEADCOUNT	198872	163749	35123	180002	29.6	53233.2

ITEM 7. TECHNICIANS BY FIELD AND PRIMARY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	R&D	OTHER
ENGINEERING TECHNICIANS	4706	3010	1696
PHYSICAL SCIENCE TECHNICIANS	4244	2936	1308
ENVIRONMENTAL SCIENCE TECHNICIANS	1816	1545	271
MATHEMATICAL & COMPUTER SCIENCE TECHNICIANS	3522	1469	2053
LIFE SCIENCE TECHNICIANS	34966	26670	8296
PSYCHOLOGY TECHNICIANS	887	653	234
SOCIAL SCIENCE TECHNICIANS	1109	653	456
TOTAL	51250	36936	14314

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-58. SUMMARY DATA FOR 313 INSTITUTIONS AWARDING MASTER'S DEGREES IN THE SCIENCES OR ENGINEERING: JANUARY 1978

ITEM 1. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	1860	1736	54	70
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	30	30	0	0
CHEMICAL ENGINEERS	93	87	3	3
CIVIL ENGINEERS	411	390	5	16
ELECTRICAL ENGINEERS	513	475	21	17
MECHANICAL ENGINEERS	444	417	9	18
OTHER ENGINEERS	369	337	16	16
PHYSICAL SCIENTISTS, TOTAL	4322	4117	132	73
CHEMISTS	2453	2343	71	39
PHYSICISTS	1690	1612	49	29
OTHER PHYSICAL SCIENTISTS	179	162	12	5
ENVIRONMENTAL SCIENTISTS, TOTAL	1187	1136	42	9
EARTH SCIENTISTS	1082	1048	27	7
ATMOSPHERIC SCIENTISTS	52	50	1	1
OCEANOGRAPHERS	53	38	14	1
MATHEMATICAL SCIENTISTS, TOTAL	4558	4358	63	137
MATHEMATICIANS	3791	3739	22	30
COMPUTER SCIENTISTS	767	619	41	107
LIFE SCIENTISTS, TOTAL	5562	5183	271	108
AGRICULTURAL SCIENTISTS	664	549	75	40
BIOLOGICAL SCIENTISTS	4025	3869	106	50
MEDICAL SCIENTISTS	873	765	90	18
PSYCHOLOGISTS, TOTAL	4033	3729	49	255
SOCIAL SCIENTISTS, TOTAL	8037	7784	126	127
ECONOMISTS	1933	1871	33	29
SOCIOLOGISTS	2498	2442	30	26
POLITICAL SCIENTISTS	1935	1893	13	29
OTHER SOCIAL SCIENTISTS	1671	1578	50	43
TOTAL HEADCOUNT	29559	28043	737	779
FTE DISTRIBUTION, BY FUNCTION	29559	27497	1140	922

ITEM 2. FULL-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	20833	19939	484	410
ED.D., J.D., ETC.	905	849	20	36
M.D., D.D.S., D.V.M., ETC.	368	341	16	11
MASTER'S	6830	6473	141	216
BACHELOR'S OR EQUIVALENT	623	441	76	106
TOTAL	29559	28043	737	779

ITEM 3. PART-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	833	825	3	5
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	18	15	3	0
CHEMICAL ENGINEERS	28	27	0	1
CIVIL ENGINEERS	180	180	0	0
ELECTRICAL ENGINEERS	245	243	0	2
MECHANICAL ENGINEERS	175	174	0	1
OTHER ENGINEERS	187	186	0	1
PHYSICAL SCIENTISTS, TOTAL	961	928	25	8
CHEMISTS	582	566	12	4
PHYSICISTS	307	292	11	4
OTHER PHYSICAL SCIENTISTS	72	70	2	0
ENVIRONMENTAL SCIENTISTS, TOTAL	260	257	0	3
EARTH SCIENTISTS	217	214	0	3
ATMOSPHERIC SCIENTISTS	18	18	0	0
OCEANOGRAPHERS	25	25	0	0
MATHEMATICAL SCIENTISTS, TOTAL	1445	1427	7	11
MATHEMATICIANS	1071	1068	1	2
COMPUTER SCIENTISTS	374	359	6	9
LIFE SCIENTISTS, TOTAL	1686	1636	35	15
AGRICULTURAL SCIENTISTS	115	111	4	0
BIOLOGICAL SCIENTISTS	968	952	15	1
MEDICAL SCIENTISTS	603	573	16	14
PSYCHOLOGISTS, TOTAL	1528	1488	0	40
SOCIAL SCIENTISTS, TOTAL	2909	2887	3	19
ECONOMISTS	876	868	2	6
SOCIOLOGISTS	906	902	0	4
POLITICAL SCIENTISTS	541	538	1	2
OTHER SOCIAL SCIENTISTS	586	579	0	7
TOTAL HEADCOUNT	9622	9448	73	101
FTE DISTRIBUTION, BY FUNCTION	3583	3481	48	54

ITEM 4. PART-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	2893	2818	44	31
ED.D., J.D., ETC.	97	91	1	5
M.D., D.D.S., D.V.M., ETC.	610	595	1	14
MASTER'S	4634	4591	7	36
BACHELOR'S OR EQUIVALENT	1388	1353	20	15
TOTAL	9622	9448	73	101

TABLE B-58 CONTINUED. SUMMARY DATA FOR 313 INSTITUTIONS AWARDING MASTER'S DEGREES IN THE SCIENCES OR ENGINEERING: JANUARY 1978

ITEM 5. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	MEN	WOMEN
ENGINEERS, TOTAL	1860	1842	18
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	30	30	0
CHEMICAL ENGINEERS	93	93	0
CIVIL ENGINEERS	411	404	7
ELECTRICAL ENGINEERS	513	509	4
MECHANICAL ENGINEERS	444	441	3
OTHER ENGINEERS	369	365	4
PHYSICAL SCIENTISTS, TOTAL	4322	3968	354
CHEMISTS	2453	2185	268
PHYSICISTS	1690	1625	65
OTHER PHYSICAL SCIENTISTS	179	158	21
ENVIRONMENTAL SCIENTISTS, TOTAL	1187	1123	64
EARTH SCIENTISTS	1082	1026	56
ATMOSPHERIC SCIENTISTS	52	50	2
OCEANOGRAPHERS	53	47	6
MATHEMATICAL SCIENTISTS, TOTAL	4558	3938	620
MATHEMATICIANS	3803	3242	561
COMPUTER SCIENTISTS	755	696	59
LIFE SCIENTISTS, TOTAL	5562	4575	987
AGRICULTURAL SCIENTISTS	664	608	56
BIOLOGICAL SCIENTISTS	4025	3354	671
MEDICAL SCIENTISTS	873	613	260
PSYCHOLOGISTS, TOTAL	4033	3085	948
SOCIAL SCIENTISTS, TOTAL	8037	6630	1407
ECONOMISTS	1933	1759	174
SOCIOLOGISTS	2498	1850	648
POLITICAL SCIENTISTS	1935	1713	222
OTHER SOCIAL SCIENTISTS	1671	1308	363
TOTAL HEADCOUNT	29559	25161	4398

ITEM 6. SCIENTISTS AND ENGINEERS BY FIELD AND EMPLOYMENT STATUS, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FIELD: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	FULL-TIME	PART-TIME	TOTAL FTE'S	% TOTAL FTE'S DEVOTED TO R&D	FTE'S DEVOTED TO R&D
ENGINEERS, TOTAL	2693	1860	833	2161	4.6	99.3
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	48	30	18	37	7.2	2.7
CHEMICAL ENGINEERS	121	93	28	107	2.6	2.8
CIVIL ENGINEERS	591	411	180	477	2.4	11.2
ELECTRICAL ENGINEERS	758	513	245	597	6.0	36.1
MECHANICAL ENGINEERS	619	444	175	512	3.9	20.2
OTHER ENGINEERS	556	369	187	431	6.1	26.4
PHYSICAL SCIENTISTS, TOTAL	5283	4322	961	4794	5.0	240.7
CHEMISTS	3035	2453	582	2762	5.6	155.7
PHYSICISTS	1997	1690	307	1823	4.2	77.3
OTHER PHYSICAL SCIENTISTS	251	179	72	209	3.7	7.8
ENVIRONMENTAL SCIENTISTS, TOTAL	1447	1187	260	1305	5.8	75.8
EARTH SCIENTISTS	1299	1082	217	1182	4.3	51.0
ATMOSPHERIC SCIENTISTS	70	52	18	61	6.7	4.1
OCEANOGRAPHERS	78	53	25	62	33.5	20.8
MATHEMATICAL SCIENTISTS, TOTAL	6003	4558	1445	5189	2.9	151.5
MATHEMATICIANS	4862	3791	1071	4231	2.2	93.0
COMPUTER SCIENTISTS	1141	767	374	958	6.1	58.5
LIFE SCIENTISTS, TOTAL	7248	5562	1686	6142	6.6	403.8
AGRICULTURAL SCIENTISTS	779	664	115	708	10.4	73.5
BIOLOGICAL SCIENTISTS	4993	4025	968	4400	4.9	216.0
MEDICAL SCIENTISTS	1476	873	603	1034	11.1	114.3
PSYCHOLOGISTS, TOTAL	5561	4033	1528	4628	2.1	98.1
SOCIAL SCIENTISTS, TOTAL	10946	8037	2909	9238	2.7	253.3
ECONOMISTS	2809	1933	876	2320	2.3	53.8
SOCIOLOGISTS	3404	2498	906	2834	2.6	72.6
POLITICAL SCIENTISTS	2476	1935	541	2180	2.2	47.1
OTHER SOCIAL SCIENTISTS	2257	1671	586	1904	4.2	79.8
TOTAL HEADCOUNT	39181	29559	9622	33457	4.0	1322.6

ITEM 7. TECHNICIANS BY FIELD AND PRIMARY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	R&D	OTHER
ENGINEERING TECHNICIANS	337	106	231
PHYSICAL SCIENCE TECHNICIANS	501	117	384
ENVIRONMENTAL SCIENCE TECHNICIANS	81	23	58
MATHEMATICAL & COMPUTER SCIENCE TECHNICIANS	625	65	560
LIFE SCIENCE TECHNICIANS	758	244	514
PSYCHOLOGY TECHNICIANS	137	44	93
SOCIAL SCIENCE TECHNICIANS	64	11	53
TOTAL	2503	610	1893

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-59. SUMMARY DATA FOR 727 INSTITUTIONS AWARDING BACHELOR'S DEGREES IN THE SCIENCES OR ENGINEERING: JANUARY 1978

ITEM 1. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	1281	1200	20	61
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	97	94	2	1
CHEMICAL ENGINEERS	25	24	1	0
CIVIL ENGINEERS	195	178	0	17
ELECTRICAL ENGINEERS	331	314	8	9
MECHANICAL ENGINEERS	277	261	3	13
OTHER ENGINEERS	356	329	6	21
PHYSICAL SCIENTISTS, TOTAL	3683	3540	75	68
CHEMISTS	2271	2189	39	43
PHYSICISTS	1305	1249	32	24
OTHER PHYSICAL SCIENTISTS	107	102	4	1
ENVIRONMENTAL SCIENTISTS, TOTAL	544	520	14	10
EARTH SCIENTISTS	488	470	11	7
ATMOSPHERIC SCIENTISTS	15	11	2	2
OCEANOGRAPHERS	41	39	1	1
MATHEMATICAL SCIENTISTS, TOTAL	3383	3231	31	121
MATHEMATICIANS	2886	2835	16	35
COMPUTER SCIENTISTS	497	396	15	86
LIFE SCIENTISTS, TOTAL	4013	3816	125	72
AGRICULTURAL SCIENTISTS	223	166	40	17
BIOLOGICAL SCIENTISTS	3306	3211	71	24
MEDICAL SCIENTISTS	484	439	14	31
PSYCHOLOGISTS, TOTAL	2495	2316	15	164
SOCIAL SCIENTISTS, TOTAL	5814	5692	44	78
ECONOMISTS	1547	1519	14	14
SOCIOLOGISTS	1965	1927	18	20
POLITICAL SCIENTISTS	1492	1460	6	26
OTHER SOCIAL SCIENTISTS	810	786	6	18
TOTAL HEADCOUNT	21213	20315	324	574
FTE DISTRIBUTION, BY FUNCTION	21213	20112	512	589

ITEM 2. FULL-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	12822	12423	200	199
ED.D., J.D., ETC.	618	597	5	16
M.D., D.D.S., D.V.M., ETC.	333	303	12	18
MASTER'S	6761	6413	73	275
BACHELOR'S OR EQUIVALENT	679	579	34	66
TOTAL	21213	20315	324	574

ITEM 3. PART-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	228	220	6	2
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	10	10	0	0
CHEMICAL ENGINEERS	5	5	0	0
CIVIL ENGINEERS	46	44	0	2
ELECTRICAL ENGINEERS	55	54	1	0
MECHANICAL ENGINEERS	50	50	0	0
OTHER ENGINEERS	62	57	5	0
PHYSICAL SCIENTISTS, TOTAL	504	493	7	4
CHEMISTS	331	325	3	3
PHYSICISTS	157	152	4	1
OTHER PHYSICAL SCIENTISTS	16	16	0	0
ENVIRONMENTAL SCIENTISTS, TOTAL	133	132	1	0
EARTH SCIENTISTS	119	119	0	0
ATMOSPHERIC SCIENTISTS	8	8	0	0
OCEANOGRAPHERS	6	5	1	0
MATHEMATICAL SCIENTISTS, TOTAL	800	787	4	9
MATHEMATICIANS	624	617	4	3
COMPUTER SCIENTISTS	176	170	0	6
LIFE SCIENTISTS, TOTAL	916	883	14	19
AGRICULTURAL SCIENTISTS	24	20	2	2
BIOLOGICAL SCIENTISTS	541	526	10	5
MEDICAL SCIENTISTS	351	337	2	12
PSYCHOLOGISTS, TOTAL	825	804	0	21
SOCIAL SCIENTISTS, TOTAL	1640	1622	13	5
ECONOMISTS	426	423	1	2
SOCIOLOGISTS	659	650	7	2
POLITICAL SCIENTISTS	315	309	5	1
OTHER SOCIAL SCIENTISTS	240	240	0	0
TOTAL HEADCOUNT	5046	4941	45	60
FTE DISTRIBUTION, BY FUNCTION	1902	1849	22	31

ITEM 4. PART-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	1348	1319	15	14
ED.D., J.D., ETC.	87	87	0	0
M.D., D.D.S., D.V.M., ETC.	333	321	2	10
MASTER'S	2672	2629	18	25
BACHELOR'S OR EQUIVALENT	606	585	10	11
TOTAL	5046	4941	45	60

TABLE B-59 CONTINUED. SUMMARY DATA FOR 727 INSTITUTIONS AWARDING BACHELOR'S DEGREES IN THE SCIENCES OR ENGINEERING: JANUARY 1978

ITEM 5. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	MEN	WOMEN
ENGINEERS, TOTAL	1281	1271	10
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	97	95	2
CHEMICAL ENGINEERS	25	24	1
CIVIL ENGINEERS	195	194	1
ELECTRICAL ENGINEERS	331	330	1
MECHANICAL ENGINEERS	277	276	1
OTHER ENGINEERS	356	352	4
PHYSICAL SCIENTISTS, TOTAL	3683	3264	419
CHEMISTS	2271	1932	339
PHYSICISTS	1305	1247	58
OTHER PHYSICAL SCIENTISTS	107	85	22
ENVIRONMENTAL SCIENTISTS, TOTAL	544	511	33
EARTH SCIENTISTS	488	457	31
ATMOSPHERIC SCIENTISTS	15	15	0
OCEANOGRAPHERS	41	39	2
MATHEMATICAL SCIENTISTS, TOTAL	3383	2808	575
MATHEMATICIANS	2886	2368	518
COMPUTER SCIENTISTS	497	440	57
LIFE SCIENTISTS, TOTAL	4013	3102	911
AGRICULTURAL SCIENTISTS	223	203	20
BIOLOGICAL SCIENTISTS	3306	2581	725
MEDICAL SCIENTISTS	484	318	166
PSYCHOLOGISTS, TOTAL	2495	1910	585
SOCIAL SCIENTISTS, TOTAL	5814	4744	1070
ECONOMISTS	1547	1401	146
SOCIOLOGISTS	1965	1410	555
POLITICAL SCIENTISTS	1492	1304	188
OTHER SOCIAL SCIENTISTS	810	629	181
TOTAL HEADCOUNT	21213	17610	3603

ITEM 6. SCIENTISTS AND ENGINEERS BY FIELD AND EMPLOYMENT STATUS, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FIELD: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	FULL-TIME	PART-TIME	TOTAL FTE'S	% TOTAL FTE'S DEVOTED TO R&D	FTE'S DEVOTED TO R&D
ENGINEERS, TOTAL	1509	1281	228	1415	4.0	56.0
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	107	97	10	99	8.8	8.7
CHEMICAL ENGINEERS	30	25	5	30	0.0	0.0
CIVIL ENGINEERS	241	195	46	223	2.7	5.9
ELECTRICAL ENGINEERS	386	331	55	373	5.6	20.9
MECHANICAL ENGINEERS	327	277	50	304	2.7	8.1
OTHER ENGINEERS	418	356	62	386	3.2	12.4
PHYSICAL SCIENTISTS, TOTAL	4187	3683	504	3978	2.9	115.2
CHEMISTS	2602	2271	331	2460	2.8	68.0
PHYSICISTS	1462	1305	157	1399	3.3	45.9
OTHER PHYSICAL SCIENTISTS	123	107	16	119	1.1	1.3
ENVIRONMENTAL SCIENTISTS, TOTAL	677	544	133	610	2.8	17.0
EARTH SCIENTISTS	607	488	119	547	2.6	14.0
ATMOSPHERIC SCIENTISTS	23	15	8	19	2.8	0.5
OCEANOGRAPHERS	47	41	6	44	5.6	2.5
MATHEMATICAL SCIENTISTS, TOTAL	4183	3383	800	3806	1.5	55.4
MATHEMATICIANS	3510	2886	624	3208	1.3	41.1
COMPUTER SCIENTISTS	673	497	176	598	2.4	14.3
LIFE SCIENTISTS, TOTAL	4929	4013	916	4436	3.5	154.3
AGRICULTURAL SCIENTISTS	247	223	24	237	7.8	18.5
BIOLOGICAL SCIENTISTS	3847	3306	541	3605	3.3	119.9
MEDICAL SCIENTISTS	835	484	351	594	2.7	15.9
PSYCHOLOGISTS, TOTAL	3320	2495	825	2864	2.0	56.1
SOCIAL SCIENTISTS, TOTAL	7454	5814	1640	6578	1.4	92.0
ECONOMISTS	1973	1547	426	1772	1.5	26.8
SOCIOLOGISTS	2624	1965	659	2242	1.5	33.7
POLITICAL SCIENTISTS	1807	1492	315	1654	1.6	26.4
OTHER SOCIAL SCIENTISTS	1050	810	240	910	0.6	5.1
TOTAL HEADCOUNT	26259	21213	5046	23687	2.3	546.1

ITEM 7. TECHNICIANS BY FIELD AND PRIMARY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	R&D	OTHER
ENGINEERING TECHNICIANS	241	13	228
PHYSICAL SCIENCE TECHNICIANS	280	33	247
ENVIRONMENTAL SCIENCE TECHNICIANS	37	5	32
MATHEMATICAL & COMPUTER SCIENCE TECHNICIANS	380	61	319
LIFE SCIENCE TECHNICIANS	376	106	270
PSYCHOLOGY TECHNICIANS	45	6	39
SOCIAL SCIENCE TECHNICIANS	48	5	43
TOTAL	1407	229	1178

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-60. SUMMARY DATA FOR 803 TWO-YEAR INSTITUTIONS OF HIGHER EDUCATION: JANUARY 1978

ITEM 1. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	3068	2992	16	60
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	90	89	0	1
CHEMICAL ENGINEERS	71	68	1	2
CIVIL ENGINEERS	543	529	4	10
ELECTRICAL ENGINEERS	906	893	3	10
MECHANICAL ENGINEERS	704	683	5	16
OTHER ENGINEERS	754	730	3	21
PHYSICAL SCIENTISTS, TOTAL	3658	3606	4	48
CHEMISTS	2059	2032	1	26
PHYSICISTS	1279	1266	3	10
OTHER PHYSICAL SCIENTISTS	320	308	0	12
ENVIRONMENTAL SCIENTISTS, TOTAL	675	669	0	6
EARTH SCIENTISTS	600	596	0	4
ATMOSPHERIC SCIENTISTS	22	21	0	1
OCEANOGRAPHERS	53	52	0	1
MATHEMATICAL SCIENTISTS, TOTAL	5161	5048	16	97
MATHEMATICIANS	4219	4189	6	24
COMPUTER SCIENTISTS	942	859	10	73
LIFE SCIENTISTS, TOTAL	5653	5567	12	74
AGRICULTURAL SCIENTISTS	832	815	1	16
BIOLOGICAL SCIENTISTS	3784	3735	5	44
MEDICAL SCIENTISTS	1037	1017	6	14
PSYCHOLOGISTS, TOTAL	2867	2350	11	496
SOCIAL SCIENTISTS, TOTAL	5101	4986	37	78
ECONOMISTS	928	916	5	7
SOCIOLOGISTS	1573	1556	1	16
POLITICAL SCIENTISTS	1183	1169	3	11
OTHER SOCIAL SCIENTISTS	1417	1345	28	44
TOTAL HEADCOUNT	26183	25228	96	859
FTE DISTRIBUTION, BY FUNCTION	26183	25216	87	880

ITEM 2. FULL-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	3567	3417	28	122
ED.D., J.D., ETC.	666	614	1	51
M.D., D.D.S., D.V.M., ETC.	266	250	6	10
MASTER'S	18783	18149	41	593
BACHELOR'S OR EQUIVALENT	2901	2798	20	83
TOTAL	26183	25228	96	859

ITEM 3. PART-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	1976	1974	1	1
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	58	58	0	0
CHEMICAL ENGINEERS	30	30	0	0
CIVIL ENGINEERS	336	336	0	0
ELECTRICAL ENGINEERS	607	607	0	0
MECHANICAL ENGINEERS	379	379	0	0
OTHER ENGINEERS	566	564	1	1
PHYSICAL SCIENTISTS, TOTAL	1483	1477	4	2
CHEMISTS	876	871	4	1
PHYSICISTS	393	393	0	0
OTHER PHYSICAL SCIENTISTS	214	213	0	1
ENVIRONMENTAL SCIENTISTS, TOTAL	276	276	0	0
EARTH SCIENTISTS	225	225	0	0
ATMOSPHERIC SCIENTISTS	27	27	0	0
OCEANOGRAPHERS	24	24	0	0
MATHEMATICAL SCIENTISTS, TOTAL	4094	4092	1	1
MATHEMATICIANS	3077	3076	1	0
COMPUTER SCIENTISTS	1017	1016	0	1
LIFE SCIENTISTS, TOTAL	2225	2225	0	0
AGRICULTURAL SCIENTISTS	426	426	0	0
BIOLOGICAL SCIENTISTS	1369	1369	0	0
MEDICAL SCIENTISTS	430	430	0	0
PSYCHOLOGISTS, TOTAL	2012	1970	0	42
SOCIAL SCIENTISTS, TOTAL	3463	3462	0	1
ECONOMISTS	745	745	0	0
SOCIOLOGISTS	1175	1174	0	1
POLITICAL SCIENTISTS	547	547	0	0
OTHER SOCIAL SCIENTISTS	996	996	0	0
TOTAL HEADCOUNT	15529	15476	6	47
FTE DISTRIBUTION, BY FUNCTION	5238	5227	1	10

ITEM 4. PART-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	1638	1630	4	4
ED.D., J.D., ETC.	231	231	0	0
M.D., D.D.S., D.V.M., ETC.	216	214	0	2
MASTER'S	10208	10195	2	11
BACHELOR'S OR EQUIVALENT	3236	3206	0	30
TOTAL	15529	15476	6	47

TABLE B-60 CONTINUED. SUMMARY DATA FOR 803 TWO-YEAR INSTITUTIONS OF HIGHER EDUCATION: JANUARY 1978

ITEM 5. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	MEN	WOMEN
ENGINEERS, TOTAL	3068	3014	54
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	90	87	3
CHEMICAL ENGINEERS	71	71	0
CIVIL ENGINEERS	543	536	7
ELECTRICAL ENGINEERS	906	898	8
MECHANICAL ENGINEERS	704	697	7
OTHER ENGINEERS	754	725	29
PHYSICAL SCIENTISTS, TOTAL	3658	3184	474
CHEMISTS	2059	1695	364
PHYSICISTS	1279	1211	68
OTHER PHYSICAL SCIENTISTS	320	278	42
ENVIRONMENTAL SCIENTISTS, TOTAL	675	616	59
EARTH SCIENTISTS	600	545	55
ATMOSPHERIC SCIENTISTS	22	20	2
OCEANOGRAPHERS	53	51	2
MATHEMATICAL SCIENTISTS, TOTAL	5161	4101	1060
MATHEMATICIANS	4219	3308	911
COMPUTER SCIENTISTS	942	793	149
LIFE SCIENTISTS, TOTAL	5653	3890	1763
AGRICULTURAL SCIENTISTS	832	799	33
BIOLOGICAL SCIENTISTS	3788	2805	983
MEDICAL SCIENTISTS	1033	286	747
PSYCHOLOGISTS, TOTAL	2867	1886	981
SOCIAL SCIENTISTS, TOTAL	5101	4063	1038
ECONOMISTS	929	816	113
SOCIOLOGISTS	1574	1117	457
POLITICAL SCIENTISTS	1181	1028	153
OTHER SOCIAL SCIENTISTS	1417	1102	315
TOTAL HEADCOUNT	26183	20754	5429

ITEM 6. SCIENTISTS AND ENGINEERS BY FIELD AND EMPLOYMENT STATUS, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FIELD: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	FULL-TIME	PART-TIME	TOTAL FTE'S	% TOTAL FTE'S DEVOTED TO R&D	FTE'S DEVOTED TO R&D
ENGINEERS, TOTAL	5044	3068	1976	3890	0.1	5.1
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	148	90	58	110	0.0	0.0
CHEMICAL ENGINEERS	101	71	30	83	0.0	0.0
CIVIL ENGINEERS	879	543	336	686	0.1	0.9
ELECTRICAL ENGINEERS	1513	906	607	1168	0.0	0.0
MECHANICAL ENGINEERS	1083	704	379	861	0.5	4.1
OTHER ENGINEERS	1320	754	566	982	0.0	0.0
PHYSICAL SCIENTISTS, TOTAL	5141	3658	1483	4410	0.0	2.1
CHEMISTS	2935	2059	876	2507	0.1	2.0
PHYSICISTS	1672	1279	393	1496	0.0	0.1
OTHER PHYSICAL SCIENTISTS	534	320	214	407	0.0	0.0
ENVIRONMENTAL SCIENTISTS, TOTAL	951	675	276	833	0.1	1.1
EARTH SCIENTISTS	825	600	225	736	0.2	1.1
ATMOSPHERIC SCIENTISTS	49	22	27	33	0.0	0.0
OCEANOGRAPHERS	77	53	24	64	0.0	0.0
MATHEMATICAL SCIENTISTS, TOTAL	9255	5161	4094	6951	0.2	13.6
MATHEMATICIANS	7296	4219	3077	5614	0.1	4.5
COMPUTER SCIENTISTS	1959	942	1017	1337	0.7	9.1
LIFE SCIENTISTS, TOTAL	7878	5653	2225	6757	0.2	12.0
AGRICULTURAL SCIENTISTS	1258	832	426	1013	0.2	2.3
BIOLOGICAL SCIENTISTS	5153	3784	1369	4521	0.2	9.7
MEDICAL SCIENTISTS	1467	1037	430	1223	0.0	0.0
PSYCHOLOGISTS, TOTAL	4879	2867	2012	3721	0.4	13.5
SOCIAL SCIENTISTS, TOTAL	8564	5101	3463	6566	0.2	12.1
ECONOMISTS	1673	928	745	1249	0.1	1.3
SOCIOLOGISTS	2748	1573	1175	2107	0.0	0.6
POLITICAL SCIENTISTS	1730	1183	547	1449	0.2	3.6
OTHER SOCIAL SCIENTISTS	2413	1417	996	1761	0.4	6.6
TOTAL HEADCOUNT	41712	26183	15529	33128	0.2	59.6

ITEM 7. TECHNICIANS BY FIELD AND PRIMARY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	R&D	OTHER
ENGINEERING TECHNICIANS	533	37	496
PHYSICAL SCIENCE TECHNICIANS	342	4	338
ENVIRONMENTAL SCIENCE TECHNICIANS	47	4	43
MATHEMATICAL & COMPUTER SCIENCE TECHNICIANS	703	22	681
LIFE SCIENCE TECHNICIANS	610	17	593
PSYCHOLOGY TECHNICIANS	51	2	49
SOCIAL SCIENCE TECHNICIANS	75	1	74
TOTAL	2361	87	2274

SOURCE: NATIONAL SCIENCE FOUNDATION.

TABLE B-61. SUMMARY DATA FOR 21 FFRDC'S: JANUARY 1978

ITEM 1. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	6597	0	6408	189
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	222	0	222	0
CHEMICAL ENGINEERS	280	0	276	4
CIVIL ENGINEERS	151	0	122	29
ELECTRICAL ENGINEERS	2708	0	2681	27
MECHANICAL ENGINEERS	1686	0	1643	43
OTHER ENGINEERS	1550	0	1464	86
PHYSICAL SCIENTISTS, TOTAL	5280	0	5124	156
CHEMISTS	1382	0	1323	59
PHYSICISTS	3337	0	3276	61
OTHER PHYSICAL SCIENTISTS	561	0	525	36
ENVIRONMENTAL SCIENTISTS, TOTAL	497	0	497	0
EARTH SCIENTISTS	308	0	308	0
ATMOSPHERIC SCIENTISTS	170	0	170	0
OCEANOGRAPHERS	19	0	19	0
MATHEMATICAL SCIENTISTS, TOTAL	1419	0	1371	48
MATHEMATICIANS	758	0	747	11
COMPUTER SCIENTISTS	661	0	624	37
LIFE SCIENTISTS, TOTAL	675	0	669	6
AGRICULTURAL SCIENTISTS	0	0	0	0
BIOLOGICAL SCIENTISTS	587	0	582	5
MEDICAL SCIENTISTS	88	0	87	1
PSYCHOLOGISTS, TOTAL	17	0	17	0
SOCIAL SCIENTISTS, TOTAL	115	0	109	6
ECONOMISTS	58	0	57	1
SOCIOLOGISTS	3	0	3	0
POLITICAL SCIENTISTS	9	0	9	0
OTHER SOCIAL SCIENTISTS	45	0	40	5
TOTAL HEADCOUNT	14600	0	14195	405
FTE DISTRIBUTION, BY FUNCTION	14600	1	14194	405

ITEM 2. FULL-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	5802	0	5732	70
ED.D., J.D., ETC.	0	0	0	0
M.D., D.D.S., D.V.M., ETC.	41	0	40	1
MASTER'S	3601	0	3505	96
BACHELOR'S OR EQUIVALENT	5156	0	4918	238
TOTAL	14600	0	14195	405

ITEM 3. PART-TIME SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY FUNCTION, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	TEACHING	R&D	OTHER
ENGINEERS, TOTAL	30	0	27	3
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	0	0	0	0
CHEMICAL ENGINEERS	2	0	2	0
CIVIL ENGINEERS	0	0	0	0
ELECTRICAL ENGINEERS	10	0	10	0
MECHANICAL ENGINEERS	7	0	7	0
OTHER ENGINEERS	11	0	8	3
PHYSICAL SCIENTISTS, TOTAL	99	0	72	27
CHEMISTS	32	0	31	1
PHYSICISTS	57	0	31	26
OTHER PHYSICAL SCIENTISTS	10	0	10	0
ENVIRONMENTAL SCIENTISTS, TOTAL	10	0	10	0
EARTH SCIENTISTS	7	0	7	0
ATMOSPHERIC SCIENTISTS	3	0	3	0
OCEANOGRAPHERS	0	0	0	0
MATHEMATICAL SCIENTISTS, TOTAL	46	0	35	11
MATHEMATICIANS	12	0	10	2
COMPUTER SCIENTISTS	34	0	25	9
LIFE SCIENTISTS, TOTAL	31	0	31	0
AGRICULTURAL SCIENTISTS	0	0	0	0
BIOLOGICAL SCIENTISTS	23	0	23	0
MEDICAL SCIENTISTS	8	0	8	0
PSYCHOLOGISTS, TOTAL	0	0	0	0
SOCIAL SCIENTISTS, TOTAL	5	0	5	0
ECONOMISTS	3	0	3	0
SOCIOLOGISTS	1	0	1	0
POLITICAL SCIENTISTS	0	0	0	0
OTHER SOCIAL SCIENTISTS	1	0	1	0
TOTAL HEADCOUNT	221	0	180	41
FTE DISTRIBUTION, BY FUNCTION	123	0	102	21

ITEM 4. PART-TIME SCIENTISTS AND ENGINEERS BY LEVEL OF ATTAINMENT AND PRIMARY FUNCTION: JANUARY 1978

HIGHEST EARNED DEGREE	TOTAL	TEACHING	R&D	OTHER
DOCTORATE HOLDERS, BY TYPE				
PH.D. OR SC.D.	61	0	60	1
ED.D., J.D., ETC.	0	0	0	0
M.D., D.D.S., D.V.M., ETC.	6	0	6	0
MASTER'S	66	0	49	17
BACHELOR'S OR EQUIVALENT	88	0	65	23
TOTAL	221	0	180	41

TABLE B-61 CONTINUED. SUMMARY DATA FOR 21 FFRDC'S: JANUARY 1978

ITEM 5. FULL-TIME SCIENTISTS AND ENGINEERS BY FIELD AND SEX: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	MEN	WOMEN
ENGINEERS, TOTAL	6597	6518	79
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	222	220	2
CHEMICAL ENGINEERS	280	275	5
CIVIL ENGINEERS	151	148	3
ELECTRICAL ENGINEERS	2708	2687	21
MECHANICAL ENGINEERS	1686	1667	19
OTHER ENGINEERS	1550	1521	29
PHYSICAL SCIENTISTS, TOTAL	5280	4980	300
CHEMISTS	1382	1278	104
PHYSICISTS	3337	3230	107
OTHER PHYSICAL SCIENTISTS	561	472	89
ENVIRONMENTAL SCIENTISTS, TOTAL	497	460	37
EARTH SCIENTISTS	308	283	25
ATMOSPHERIC SCIENTISTS	170	161	9
OCEANOGRAPHERS	19	16	3
MATHEMATICAL SCIENTISTS, TOTAL	1419	1168	251
MATHEMATICIANS	758	605	153
COMPUTER SCIENTISTS	661	563	98
LIFE SCIENTISTS, TOTAL	675	535	140
AGRICULTURAL SCIENTISTS	0	0	0
BIOLOGICAL SCIENTISTS	587	477	110
MEDICAL SCIENTISTS	88	58	30
PSYCHOLOGISTS, TOTAL	17	15	2
SOCIAL SCIENTISTS, TOTAL	115	104	11
ECONOMISTS	58	53	5
SOCIOLOGISTS	3	3	0
POLITICAL SCIENTISTS	9	9	0
OTHER SOCIAL SCIENTISTS	45	39	6
TOTAL HEADCOUNT	14600	13780	820

ITEM 6. SCIENTISTS AND ENGINEERS BY FIELD AND EMPLOYMENT STATUS, AND TOTAL FULL-TIME EQUIVALENTS (FTE) BY FIELD: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	FULL-TIME	PART-TIME	TOTAL FTE'S	% TOTAL FTE'S DEVOTED TO R&D	FTE'S DEVOTED TO R&D
ENGINEERS, TOTAL	6627	6597	30	6614	97.5	6446.0
AERONAUTICAL & ASTRONAUTICAL ENGINEERS	222	222	0	222	100.0	222.0
CHEMICAL ENGINEERS	282	280	2	282	100.0	282.0
CIVIL ENGINEERS	151	151	0	151	82.8	125.0
ELECTRICAL ENGINEERS	2718	2708	10	2714	99.2	2693.2
MECHANICAL ENGINEERS	1693	1686	7	1689	97.8	1652.0
OTHER ENGINEERS	1561	1550	11	1556	94.6	1471.8
PHYSICAL SCIENTISTS, TOTAL	5379	5280	99	5330	96.7	5156.7
CHEMISTS	1414	1382	32	1399	95.5	1335.5
PHYSICISTS	3394	3337	57	3365	97.9	3294.0
OTHER PHYSICAL SCIENTISTS	571	561	10	566	93.1	527.1
ENVIRONMENTAL SCIENTISTS, TOTAL	507	497	10	503	100.0	503.0
EARTH SCIENTISTS	315	308	7	312	100.0	312.0
ATMOSPHERIC SCIENTISTS	173	170	3	172	100.0	172.0
OCEANOGRAPHERS	19	19	0	19	100.0	19.0
MATHEMATICAL SCIENTISTS, TOTAL	1465	1419	46	1447	96.7	1398.8
MATHEMATICIANS	770	758	12	766	99.6	763.0
COMPUTER SCIENTISTS	695	661	34	681	93.4	635.9
LIFE SCIENTISTS, TOTAL	706	675	31	694	98.6	684.4
AGRICULTURAL SCIENTISTS	0	0	0	0	0.0	0.0
BIOLOGICAL SCIENTISTS	610	587	23	601	99.0	595.1
MEDICAL SCIENTISTS	96	88	8	93	96.0	89.3
PSYCHOLOGISTS, TOTAL	17	17	0	17	100.0	17.0
SOCIAL SCIENTISTS, TOTAL	120	115	5	119	94.6	112.5
ECONOMISTS	61	58	3	60	97.7	58.6
SOCIOLOGISTS	4	3	1	4	100.0	4.0
POLITICAL SCIENTISTS	9	9	0	9	100.0	9.0
OTHER SOCIAL SCIENTISTS	46	45	1	46	88.9	40.9
TOTAL HEADCOUNT	14821	14600	221	14724	97.2	14318.4

ITEM 7. TECHNICIANS BY FIELD AND PRIMARY FUNCTION: JANUARY 1978

FIELD OF EMPLOYMENT	TOTAL	R&D	OTHER
ENGINEERING TECHNICIANS	6623	6532	91
PHYSICAL SCIENCE TECHNICIANS	1062	1053	9
ENVIRONMENTAL SCIENCE TECHNICIANS	71	71	0
MATHEMATICAL & COMPUTER SCIENCE TECHNICIANS	820	794	26
LIFE SCIENCE TECHNICIANS	445	445	0
PSYCHOLOGY TECHNICIANS	0	0	0
SOCIAL SCIENCE TECHNICIANS	9	9	0
TOTAL	9030	8904	126

SOURCE: NATIONAL SCIENCE FOUNDATION.

APPENDIX C

Reproduction of Covering Letter, Questionnaire, and Instructions

Page

Covering Letter 64

Survey Questionnaire 65

Survey Instructions and Definitions 68

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

Dear Respondent:

Enclosed is the 1978 Survey of Scientific and Engineering Personnel Employed at Universities and Colleges. Your cooperation in providing a timely response to the survey will be greatly appreciated.

The data from this survey, as you may be aware, are utilized in Science Indicators, a recurring report prepared for the President by the National Science Board. The academic manpower statistics play a significant role in the preparation of one of the major sections of the report concerning an analysis of the supply and utilization of science and engineering personnel in the United States. Science Indicators serves as an input in shaping future policies concerning Federal support for science and technology, including academic science. The survey results are also the basis for annual NSF publications, such as Highlights, Detailed Statistical Tables, and analytical reports. We have been able to publish the reports in the same year that the data have been collected largely because of the excellent cooperation from you and the rest of the higher education community.

The enclosed survey form is similar to the one used last year, except for two changes. First, NSF has deleted the item that requested data on scientists and engineers with Ph.D. or Sc.D. degrees by field in which primarily employed (previously known as item 5). Second, the item requesting full-time-equivalent (FTE) data on research and total activities, by field (now item 6) is no longer designated as "optional."

We would appreciate your fullest cooperation in responding to the FTE item in the current survey. The continuation of this effort is worthwhile because FTE data represent a potentially better measure of research involvement than do headcount data classified on a "primarily employed" basis. NSF acknowledges that some institutions had difficulty in reporting FTE data in the 1977 survey. Many institutions, however, indicated that data were not available in 1977 but were

expected to be available by 1978. We feel that another year's experience in collecting FTE data in this survey, along with assessments received from other studies over the next year, are required in order to provide sufficient information upon which to base a final decision on the future of FTE reporting in this survey.

I would like to clarify a question raised several times in the past year about the principal focus of this survey. Some respondents have indicated that the survey appears to be aimed primarily at large research universities. While data on personnel engaged in research activities is an important objective of the survey, it is by no means the only area of major NSF concern. Information on personnel primarily engaged in teaching activities at all levels of institutions constitutes another major objective of the survey.

Included in the survey package is a postcard that should be returned immediately upon receipt. It will assure us that the questionnaire has reached you and will provide the names of persons to be contacted if questions arise in the follow-up and editing phases of the survey. Please complete and return the questionnaire to us by March 31, 1978.

A final report on the January 1976 survey was published and distributed in June 1977 and selected tabulations covering the 1977 survey were published and distributed in November 1977. Copies of these reports were sent to you, if you or another official in your institution indicated interest in them in an earlier postcard user's survey. If you did not receive any of these publications or you would like any additional data, please let us know and we will try to provide them to you.

Thank you in advance for your efforts in preparing an early response to this survey. If you have any questions, please contact me or Mr. Robert Loycano. We may be reached on (202) 634-4673.

Sincerely yours,

Penny D. Foster

Penny D. Foster
Acting Study Director
Universities and Nonprofit
Institutions Studies Group
Division of Science Resources Studies

Enclosures

OMB No. 99 R0282
Approval Expires December 1978

NATIONAL SCIENCE FOUNDATION
Washington, D.C. 20550

SURVEY OF SCIENTIFIC AND ENGINEERING PERSONNEL EMPLOYED AT UNIVERSITIES AND COLLEGES, JANUARY 1978

Organizations are requested to complete and return this form to:

NATIONAL SCIENCE FOUNDATION
1800 G Street, N.W.
Washington, D.C. 20550 Attn: UNISG

This information is solicited under the authority of the National Science Foundation Act of 1950, as amended. All information you provide will be used for statistical purposes only. Your response is entirely voluntary and your failure to provide some or all of the information will in no way adversely affect your institution.

Name and address of institution:

(Please correct if name or address has changed)

This survey requests employment data as of January 1978. The completed 1978 questionnaire should be returned to NSF by March 31, 1978. Your cooperation in returning the survey questionnaire promptly will be appreciated. If you determine, however, that you cannot respond by March 31, please notify NSF and request an extension of time.

Please read the enclosed instructions before completing this form. If you have any questions about the completion of the form, contact **Robert Loycano (202-634-4673).** Where exact data are not available, use estimates. Please complete all items; estimates by college officials will be better than NSF estimates. Enter "O" as an item total (lines 2100; 2200, etc., are item totals) rather than leave the total blank.

All entries should be in whole numbers. Please do not enter decimals or fractions, except in column 5 of item 6 where 1 decimal place is optional.

Institutions of Higher Education

Include data for branches (including regional campuses) and all organizational units of your institution, such as a medical school or agricultural experiment station. Also include any hospital or clinic owned, operated, or controlled by the University, and integrated operationally with the clinical programs of your medical school. **Exclude** data for any federally funded research and development centers (FFRDC's) administered by your institution. **(See below).**

Please classify your institution according to (1) highest degree granted in the sciences or engineering and (2) primary administrative control.

Highest degree granted in the sciences or engineering during 1976-77	Check one	One example of a science or engineering field in which highest degree was awarded	Check primary administrative control of your institution	
Ph.D.	☐		Federal	☐
M.D., D.D.S., etc.	☐		State	☐
Master's	☐		Local	☐
Bachelor's or equivalent	☐		Private	☐
Degree other than in science or engineering	☐			
2-year program	☐			

Federally Funded Research and Development Centers (FFRDC's)

Separate forms have been mailed directly to all FFRDC's administered by academic institutions. A list of these centers appears on page 2 of the Instructions and Definitions.

NSF FORM 724 (12-77)

SECTION A. NUMBER OF SCIENTISTS AND ENGINEERS, JANUARY 1978

(INCLUDE postdoctorals; EXCLUDE graduate students)

Item 1. Full-time scientists and engineers, by field and function in which primarily employed (enter the totals of 1a thru 1g in 1h); and total full-time-equivalents (FTE), by function, January 1978 (enter in 1i)

	FIELD OF EMPLOYMENT		TOTAL (1)	TEACHING (2)	R&D (3)	Other activities (4)
a.	Engineers (total)	2110				
	(1) Aeronautical & astronautical engineers	2111				
	(2) Chemical engineers	2112				
	(3) Civil engineers	2113				
	(4) Electrical engineers	2114				
	(5) Mechanical engineers	2115				
	(6) Other engineers	2116				
b.	Physical scientists (total)	2120				
	(1) Chemists	2121				
	(2) Physicists	2122				
	(3) Other physical scientists	2123				
c.	Environmental scientists (total)	2130				
	(1) Earth scientists	2131				
	(2) Atmospheric scientists	2132				
	(3) Oceanographers	2133				
d.	Mathematical & computer scientists (total)	2140				
	(1) Mathematicians (exclude computer scientists)	2141				
	(2) Computer scientists (exclude programmers)	2142				
e.	Life scientists (total)	2150				
	(1) Agricultural scientists	2151				
	(2) Biological scientists	2152				
	(3) Medical scientists (see instructions, p. 1)	2153				
f.	Psychologists (total)	2160				
g.	Social scientists (total) (exclude historians)	2170				
	(1) Economists	2171				
	(2) Sociologists	2172				
	(3) Political scientists	2173				
	(4) Other social scientists	2174				
h.	Total headcount (sum of a thru g) a/	2100				
i.	FTE distribution, by function b/	2190				

Item 2. Full-time scientists and engineers, by highest earned degree and function in which primarily employed, January 1978

	HIGHEST EARNED DEGREE		TOTAL (1)	TEACHING (2)	R&D (3)	Other activities (4)
	Doctorate holders, by type					
a.	Ph.D. or Sc.D.	2210				
b.	Ed.D.	2220				
c.	M.D., D.D.S., D.V.M., etc.	2230				
d.	Master's	2240				
e.	Bachelor's or the equivalent	2250				
f.	Total (sum of a thru e)	2200				

a/ Totals in line 1h **should be the same** as the corresponding totals in line 2f.

b/ The total reported in item 1i, column 1, should, by definition, be the same as the total in item 1h, column 1. However, the FTE distribution by function (columns 2, 3, and 4) will not necessarily coincide with the functional distribution on a "primarily employed" basis in line 1h.

Item 3. Part-time scientists and engineers, by field and function in which primarily employed (enter the totals of 3a thru 3g in 3h); and total FTE's by function, January 1978 (enter in 3i) (INCLUDE postdoctorals; EXCLUDE graduate students)

FIELD OF EMPLOYMENT		TOTAL (1)	TEACHING (2)	R&D (3)	Other activities (4)
a. Engineers (total)	2310				
(1) Aeronautical & astronautical engineers	2311				
(2) Chemical engineers	2312				
(3) Civil engineers	2313				
(4) Electrical engineers	2314				
(5) Mechanical engineers	2315				
(6) Other engineers	2316				
b. Physical scientists (total)	2320				
(1) Chemists	2321				
(2) Physicists	2322				
(3) Other physical scientists	2323				
c. Environmental scientists (total)	2330				
(1) Earth scientists	2331				
(2) Atmospheric scientists	2332				
(3) Oceanographers	2333				
d. Mathematical & computer scientists (total)	2340				
(1) Mathematicians (exclude computer scientists)	2341				
(2) Computer scientists (exclude programmers)	2342				
e. Life scientists (total)	2350				
(1) Agricultural scientists	2351				
(2) Biological scientists	2352				
(3) Medical scientists (see instructions, p 1.)	2353				
f. Psychologists (total)	2360				
g. Social scientists (total) (exclude historians)	2370				
(1) Economists	2371				
(2) Sociologists	2372				
(3) Political scientists	2373				
(4) Other social scientists	2374				
h. Total headcount (sum of a thru g) a/	2300				
i. FTE distribution, by function b/	2390				

Item 4. Part-time scientists and engineers, by highest earned degree and function in which primarily employed, January 1978

HIGHEST EARNED DEGREE		TOTAL (1)	TEACHING (2)	R&D (3)	Other activities (4)
Doctorate holders, by type a. Ph.D. or Sc.D.	2410				
b. Ed.D.	2420				
c. M.D., D.D.S., D.V.M., etc.	2430				
d. Master's	2440				
e. Bachelor's or the equivalent	2450				
f. Total (sum of a thru e)	2400				

a/ Totals in line 3h should be the same as the corresponding totals in line 4f.

b/ The totals in item 3i (converting figures on part-time employment into FTE's) will necessarily differ from headcount totals in line 3h.

Item 5 Full-time scientists and engineers, by field in which primarily employed, and sex, January 1978 (Totals reported in item 5, column 1, should equal the totals reported in item 1, column 1.)

FIELD OF EMPLOYMENT		TOTAL (1)	MEN (2)	WOMEN (3)
a. Engineers (total)	2610			
(1) Aeronautical & astronautical	2611			
(2) Chemical engineers	2612			
(3) Civil engineers	2613			
(4) Electrical engineers	2614			
(5) Mechanical engineers	2615			
(6) Other engineers	2616			
b. Physical scientists (total)	2620			
(1) Chemists	2621			
(2) Physicists	2622			
(3) Other physical scientists	2623			
c. Environmental scientists (total)	2630			
(1) Earth scientists	2631			
(2) Atmospheric scientists	2632			
(3) Oceanographers	2633			
d. Mathematical & computer scientists (total)	2640			
(1) Mathematicians (exclude computer scientists)	2641			
(2) Computer scien[illegible]ts (exclude [illegible]rammers)	2642			
e. Life scientists (total)	2650			
(1) Agricultural scientists	2651			
(2) Biological scientists	2652			
(3) Medical scientists (see instructions, p 1.)	2653			
f. Psychologists (total)	2660			
g. Social scientists (total) (exclude historians)	2670			
(1) Economists	2671			
(2) Sociologists	2672			
(3) Political scientists	2673			
(4) Other social scientists	2674			
h. Total headcount (sum of a thru g)	2600			

Item 6

Scientists and engineers, by field in which primarily employed, employment status, and total full-time equivalents (FTE's) by field, January 1978

NOTE: This information is needed by NSF and others interested in the current status and trends in the level of academic research, by field.

FIELD OF EMPLOYMENT		Headcounts			Estimated full-time-equivalents (FTE)	
		Total (1)	Full time [a] (2)	Part time [b] (3)	Total FTE's (Include all activities, e.g., teaching, R&D etc., of all individuals reported in col. 1) (4)	Percent of total FTE's devoted to R&D (5)
a. Engineers (total)	2710					%
(1) Aeronautical & astronautical engineers	2711					%
(2) Chemical engineers	2712					%
(3) Civil engineers	2713					%
(4) Electrical engineers	2714					%
(5) Mechanical engineers	2715					%
(6) Other engineers	2716					%
b. Physical scientists (total)	2720					%
(1) Chemists	2721					%
(2) Physicists	2722					%
(3) Other physical scientists	2723					%
c. Environmental scientists (total)	2730					%
(1) Earth scientists	2731					%
(2) Atmospheric scientists	2732					%
(3) Oceanographers	2733					%
d. Mathematical & computer scientists (total)	2740					%
(1) Mathematicians (exclude computer scientists)	2741					%
(2) Computer scientists (exclude programmers)	2742					%
e. Life scientists (total)	2750					%
(1) Agricultural scientists	2751					%
(2) Biological scientists	2752					%
(3) Medical scientists (see instructions, p. 1)	2753					%
f. Psychologists (total)	2760					%
g. Social scientists (total) (exclude historians)	2770					%
(1) Economists	2771					%
(2) Sociologists	2772					%
(3) Political scientists	2773					%
(4) Other social scientists	2774					%
h. Total (sum of a thru g)	2700					%

NOTE If you presented data in column 5 in terms of absolute numbers instead of percentages, please check this box ☐

[a] Totals in column 2 should be the same as corresponding totals in column 1 of item 1.

[b] Totals in column 3 should be the same as corresponding totals in column 1 of item 3.

SECTION B. NUMBER OF TECHNICIANS EMPLOYED IN THE SCIENCES AND ENGINEERING, January 1978

Item 7. **Technicians, by field and function in which primarily employed, January 1978**

FIELD OF EMPLOYMENT		TOTAL (1)	R&D (2)	Other activities (3)
a. Engineering technicians	2810			
b. Physical science technicians	2820			
c. Environmental science technicians	2830			
d. Mathematical and computer science technicians	2840			
e. Life science technicians	2850			
f. Psychology technicians	2860			
g. Social science technicians	2870			
h. Total (sum of a thru g)	2800			

CHECK LIST

( ) 1. Are all entries rounded to whole numbers? (Please do not enter fractions or decimals, except in column 5 of item 6 where one decimal place is optional.)

( ) 2. Do the data add to subtotals?

( ) 3. Are all items completed? YOUR ESTIMATES will be better than OURS. An explanation of estimates may be noted on a separate sheet or in the remarks.

( ) 4. Are all branches and components such as a medical school and agricultural experiment station included?

( ) 5. Have you included all postdoctorals?

1977-78 DATA CHECK

Please compare your January 1978 personnel data with your survey response for January 1977, particularly for the following item totals. Please explain below or on a separate sheet any significant changes and where possible, indicate any required adjustments in data reported in previous surveys.

	1977	1978
Total full-time scientists & engineers	Line 2100, col. 1 ☐	Line 2100, col. 1 ☐
Total part-time scientists & engineers	Line 2300, col. 1 ☐	Line 2300, col. 1 ☐
Total technicians employed in the sciences and engineering	Line 2800, col. 1 ☐	Line 2800, col. 1 ☐

CONFIDENTIALITY

The National Science Foundation recognizes that its ability to gather much of the enclosed information would be severely impaired if it could not be held in confidence. Please indicate below the number of any items which would not be supplied but for assurance that the source will be held in confidence. The Foundation will hold in confidence such information to the extent permitted by law.

ITEM

REMARKS

PLEASE TYPE OR PRINT NAME OF PERSON SUBMITTING THIS FORM	TITLE	AREA CODE	EXCH	NO.	EXT
NAME OF PERSON WHO PREPARED THIS SUBMISSION (if different from above)	TITLE	AREA CODE	EXCH	NO.	EXT

NAME OF INSTITUTION	DATE	ADDRESS (number, street, city, State, ZIP code)

OMB No. 99-R0282
Approval Expires December 1978

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

SURVEY OF SCIENTIFIC AND ENGINEERING PERSONNEL EMPLOYED AT UNIVERSITIES AND COLLEGES, JANUARY 1978

INSTRUCTIONS AND DEFINITIONS

The National Science Foundation requests your cooperation in completing the attached questionnaire covering the personnel characteristics of your institution as they relate to the sciences and engineering. This form requests employment data as of January 1978. The questionnaire should be completed and returned to NSF by March 31, 1978. If you determine, however, that you will not be able to respond by that date, please notify NSF and request an extension of time.

This survey is similar to that conducted by this office each year. The major difference this year is the deletion of the question (formerly item 5) on Ph.D./Sc.D.'s by field and employment status and the removal of the "optional" designation for the item requesting FTE data by field, (formerly item 7).

Where data reported in the current survey differ significantly from those reported in the previous survey, please indicate the reasons for the difference, such as "opening of new medical school," etc., at the end of the questionnaire in the "Remarks" section, or on a separate sheet of paper.

If you have any questions regarding information requested on this form, write or telephone Mr. Robert Loycano at the Universities and Nonprofit Institutions Studies Group, Division of Science Resources Studies, National Science Foundation, 1800 G Street, N.W., Room L-602, Washington, D.C. 20550 (Telephone: 202/634-4673). Additional forms, as well as copies of previous responses, may be obtained by writing to the above address.

Institutions of Higher Education

Academic institutions should include in the form for the parent institution data on professional and technical personnel employed in the sciences and engineering in all branches and other units of the parent institution. *Include* regional campuses, medical school, or an agricultural experiment station, but *exclude* an associated federally funded research and development center (FFRDC). FFRDC's are to report their data separately from the administering university.

Include all personnel who were paid a salary or stipend, including *postdoctorals*, and other staff, such as members of religious orders, who received no remuneration while employed at the institution.

Exclude: (1) Personnel on sabbatical or other leave status; (2) personnel employed in branches of your institution located in foreign countries; (3) unpaid voluntary staff; (4) student health service personnel; and (5) those agricultural extension personnel primarily involved in home economics and 4-H youth programs.

Medical Schools

Incorporate data for medical schools in the data for the parent institution. Medical schools are those 2- or 4-year schools of medicine approved by the Council on Medical Education and Hospitals and the Association of American Medical Colleges. *Include:* (1) Teaching and R&D functions of hospitals or clinics owned, operated, or controlled by universities and integrated operationally with the clinical programs of their medical schools; (2) research bureaus or institutes which are integral parts of medical schools; (3) research bureaus and institutes which are nonuniversity owned but are affiliated with the medical school and any university bureaus, and institutes which may be outside the departmental structure of universities, but whose senior research staff members hold teaching appointments with medical schools.

Personnel employed at such organizations that are to be reported in the survey include all M.D.'s, D.D.S.'s, etc., with *faculty* or *academic* appointments. Typical among these are physicians, dentists, public health specialists, pharmacists, etc., who spend the *greatest* proportion of their time in teaching, clinical investigation, or other R&D activities.

Exclude: (1) All medical practitioners, interns, residents, and clinical fellows *without* faculty or academic appointments; (2) scientists whose primary employment is at independent hospitals even though they may perform some teaching or research functions for your institution through cooperative agreements; (3) nurses; (4) some allied health professionals primarily involved in direct patient care, such as optometrists, nurse anesthetists, occupational therapists, and physical therapists; and, (5) unpaid voluntary staff at medical or dental schools.

Federally Funded Research and Development Centers (FFRDC's)

For purposes of this survey, FFRDC's are defined as R&D organizations exclusively or substantially financed by the Government and administered on a contractual basis by educational institutions or other organizations. The following is a current list of FFRDC's administered by universities and colleges:

Ames Laboratory
Applied Physics Laboratory (Johns Hopkins University)
Applied Research Laboratory
Argonne National Laboratory
Brookhaven National Laboratory
Center for Naval Analyses
Cerro Tololo Inter American Observatory
E. O. Lawrence Berkeley Laboratory
E. O. Lawrence Livermore Laboratory
Fermi National Accelerator Laboratory
Jet Propulsion Laboratory
Kitt Peak National Observatory
Lincoln Laboratory
Los Alamos Scientific Laboratory
National Astronomy and Ionosphere Center
National Center for Atmospheric Research
National Radio Astronomy Observatory
Oak Ridge Associated Universities
Plasma Physics Laboratory
Space Radiation Effects Laboratory
Stanford Linear Accelerator Center

Data Elements Required to Complete This Survey

If the following seven characteristics are known for each science and engineering employee, the request can be substantially completed without estimates. The characteristics are further described elsewhere in the instructions.

1. Scope of personnel included:
   a. Scientists and engineers
   b. Science and engineering technicians
2. Assignment status:
   a. Full time
   b. Part time
3. Field of employment (22 detailed fields in 7 broad groupings)
4. Full-time-equivalents (FTE's)
5. Function:
   a. Teaching
   b. Research and development
   c. Other science and engineering activities
6. Highest earned degree
   a. Ph. D. or Sc. D.
   b. Ed. D.
   c. M. D., D.D.S., D.V.M., etc.
   d. Master's
   e. Bachelor's or its equivalent
7. Classification of scientists and engineers by sex.

Classification of Fields of Employment in the Sciences and Engineering

Listed below are the broad and detailed fields of employment corresponding to those shown on the questionnaire with illustrative disciplines in each field.

Please classify persons (including those employed in interdisciplinary or multidisciplinary specializations) in the listed fields with which their activities (teaching, research, or other) are *most closely identified*. In the case of a scientist employed in a general category such as science education, he should be reported in the field *most closely related* to the academic requirements of his position—such as mathematics, sociology, or psychology.

Because of the importance of academic departments in the organizational structure and, thus, in the information systems of institutions of higher education, many institutions must report individuals in terms of the departmental assignment shown in their personnel information systems. In some instances, the designated department will not necessarily be the same as the field in which an individual is actually employed.

Because of the departmental structure, it is important that respondents include in the survey organizational units that are not part of *any* academic department. For example, scientists and engineers employed at a computer center that is not affiliated with a particular academic department should be *included* in the survey.

ENGINEERING

Aeronautical & Astronomical: aerodynamics, aerospace, space technology
Chemical: ceramic, petroleum, petroleum refining process
Civil: architectural, hydraulic, hydrologic, marine, sanitary and environmental, structural, transportation
Electrical: communication, electronic, power
Mechanical: engineering mechanics
Other Engineering: agricultural, industrial and management, metallurgical and materials, mining, nuclear, ocean engineering systems, textile, welding, interdisciplinary fields for the training of technicians

PHYSICAL SCIENCES

Chemistry: analytical, inorganic, organo-metallic, organic, pharmaceutical, physical, polymer science (exclude biochemistry)
Physics: acoustics, atomic and molecular, condensed matter, elementary particles, nuclear structure, optics, plasma
Other Physical Sciences: astronomy (laboratory astrophysics, optical astronomy, radio astronomy, theoretical astrophysics, X-ray, gamma-ray, neutrino astronomy), metallurgy, interdisciplinary fields for the training of technicians

ENVIRONMENTAL SCIENCES (TERRESTRIAL AND EXTRATERRESTRIAL)

Earth Sciences: engineering geophysics, general geology, geodesy and gravity, geomagnetism, hydrology, inorganic geochemistry, isotopic geochemistry, organic geochemistry, lab geophysics, paleomagnetism, paleontology, physical geography and cartography, seismology
Atmospheric Sciences: aeronomy, solar, weather modification, extraterrestrial atmospheres, meteorology
Oceanography: biological oceanography, chemical oceanography, geological oceanography, physical oceanography, marine geophysics

MATHEMATICAL AND COMPUTER SCIENCES

Mathematics: algebra, analysis, applied mathematics, foundations and logic, geometry, numerical analysis, statistics, topology
Computer Sciences: computer programming,[1] computer and information sciences (general), design, development, and application of computer capabilities to data storage and manipulation, information sciences and systems, systems analysis

LIFE SCIENCES

Agricultural Sciences: agronomy, animal science, dairy science, food science and technology, forestry, horticulture, poultry science
Biological Sciences: anatomy, bacteriology, biochemistry, biogeography, biophysics, ecology, embryology, entomology, evolutionary biology, genetics, immunology, microbiology, nutrition and metabolism, parasitology, pathology, pharmacology, physical anthropology, physiology, plant sciences, radiobiology, systematics, zoology, interdisciplinary fields for the training of technicians
Medical Sciences: Internal medicine, neurology, ophthalmology, preventive medicine and public health, psychiatry, radiology, surgery, veterinary medicine, dentistry, pharmacy, podiatry, anesthesiology, chemotherapy, dermatology, geriatrics, nuclear medicine, obstetrics, gynecology, oncology, pediatrics, physical medicine and rehabilitation, interdisciplinary fields for the training of technicians[2]

PSYCHOLOGY: animal behavior, clinical psychology, comparative psychology, counseling and guidance, development and personality, educational, personnel, vocational psychology and testing, experimental psychology, ethology, industrial and engineering psychology, social psychology

SOCIAL SCIENCES

Economics: agricultural economics, econometrics and economic statistics, history of economic thought, international economics, industrial, labor and agricultural economics, macroeconomics, microeconomics, public finance and fiscal policy, theory, economic systems and development
Sociology: comparative and historical, complex organizations, culture and social structure, demography, group interactions, social problems and social welfare, sociological theory
Political Science: area or regional studies, comparative government, history of political ideas, international relations and law, national, political and legal systems, political theory, public administration

Other Social Sciences: cultural anthropology, criminology, history of science, linguistics, socioeconomic geography, urban studies, research in education, and research in law, i.e., attempt to assess impact of legal systems and practices on society

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[1] Personnel employed as computer programmers should be reported as technicians (item 7).

[2] Exclude personnel primarily involved in direct patient care.

Section A—Number of Scientists and Engineers, January 1978

(Includes postdoctorals and excludes graduate students)

This section requests data on full- and part-time employed scientists and engineers. Scientists and engineers include *faculty members, postdoctorals, and other professionals* working in the sciences and engineering at your institution, including those in research administration. These professionals work at a level at which the knowledge acquired by academic training equal to a bachelor's degree is essential in the performance of duties. Graduate students are not considered scientists and engineers for survey purposes.

Two possible criteria used in determining whether an individual is employed full time are (1) his/her working 40 hours per week; or (2) his/her teaching 12 credit hours per week. (The preceding serve as illustrations only; the "full-time" workload may vary somewhat from institution to institution.)

Avoid double counting; if an individual is a full-time employee, but his assignment involves more than 1 department or more than 1 campus, he/she should be counted as 1 full-timer in his/her actual or primary field of employment and at his/her primary campus location.

Item 1. Full-time scientists and engineers, by field and function in which *primarily* employed, January 1978.

In items 1a to 1h, the functional classification of professional personnel into teaching (column 2), R&D (column 3), and other science and engineering activities (column 4), should be based on the function in which the person is *primarily* engaged or employed at the institution. For example, a person engaged in two or all three of the specified functional categories should be classified in the function in which he spends the *largest* proportion of his time. *Exclude* outside consulting work and teaching not performed under the auspices of your institution.

In classifying personnel by function, note that determinations made solely on the basis of job titles may produce a significant bias primarily toward teaching. It is important to recognize that persons with professorial rank may also be engaged in research.

In classifying an individual under a particular category (teaching, research and development, or other science and engineering activities), take into consideration all official activities even if carried on in a school or department other than the one in which he holds his principal appointment.

Teaching (column 2) is defined as encompassing those activities connected with degree-credit courses or which are intended to lead ultimately to the granting of degrees or certificates or to professional certification or licensing.

Include under "teaching" any academic administrator—such as the President, a Dean, or a department chairman—who holds a science or engineering degree, unless the individual is primarily involved in the administration of R&D activities. If the individual cannot be identified with *one* specific discipline, report the field of his highest earned degree. Administrators primarily involved in R&D activities should be reported in the "R&D" column.

Include personnel engaged in instruction of first-year trainees, residents, and other professional personnel receiving advanced training such as postdoctoral fellows or trainees.

Time spent by faculty or other staff members in supervising the thesis work of graduate students is considered to be part of the teaching function.

Exclude instructors in nursing programs, dental hygiene, etc., specialties that relate primarily to direct patient care.

Research and development (column 3) includes basic and applied research in the sciences and engineering and design and development of prototypes and processes.

Research is a systematic, intensive study directed toward fuller knowledge of the subject studied. *Research* includes activities that are separately budgeted, including all activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. This activity includes all departmental research that is separately budgeted. *Include* in this function the preparation for publication of books and papers describing the results of the specific research and development. Also *include* the *administration* of research and development.

Development is the systematic use of knowledge directed toward the design and production of useful prototypes, materials, devices, systems, methods, or processes. It does *not* include quality control or routine product testing.

Under *Other science and engineering activities* (column 4) report all professional personnel *not* primarily employed in teaching or research and development, as defined above. Examples of such activities are agricultural demonstration work not specifically excluded on page 1; adult education (if not for degree credit); dissemination of scientific information; and student counseling by individuals with degrees in psychology. *Exclude* hospital employees predominantly involved in patient services, Student Health Service professionals, and other individuals that are *not* primarily engaged in science or engineering activities. *Do not use* this category to report individuals for which there is difficulty in determining their primary function. It is preferable that you classify each person in the most appropriate functional category according to your best estimate.

Full-time-equivalent distribution, by function. In line 1i, apportion staff members across the three functions on the basis of the proportion of effort or time spent in each of the functions, thus correcting for the "primarily engaged" headcount data reported in line 1h. For example, an individual devoting three-fourths of his time to teaching and one-fourth to research and development should be counted as 0.75 in teaching and 0.25 in research and development. The FTE values should then be accumulated for each function. This sum should then be *rounded to the nearest whole number* before entering the total on the questionnaire. In line 1i, totals entered in columns 2, 3, and 4 should add to the total in column 1.

Item 2. Full-time scientists and engineers, by highest earned degree and function in which *primarily* employed, January 1978.

For the purposes of this survey, earned degrees are classified in five categories:

a. *"Ph.D. or Sc.D."* degrees (include all such earned degrees.) *Include* individuals holding both the Ph.D. (or Sc.D.) degree and any other doctorate degree.

b. *"Ed.D."* (includes all such earned degrees.)

c. *"M.D., D.D.S., D.V.M., etc."* includes individuals whose highest earned degrees are first-professional medical degrees that represent the completion of the academic requirements based on programs that require at least 2 academic years of previous college work for entrance and require a total of at least 6 academic years of college work for completion. Specifically include in line 2c first-professional degrees in Medicine (M.D.), Dentistry (D.D.S. or D.M.D.), Veterinary Medicine (D.V.M.), Chiropody or Podiatry (D.S.C. or D.P.), and Osteopathy (D.O.). Individuals holding both the Ph.D. (Sc.D.) degree and a first-professional degree such as the M.D., should be included in line 2a as mentioned in (a) above.

d. *"Master's" degrees* includes all degrees above the bachelor's and first-professional degree and other than the doctorate degrees reported between lines 2a and 2c.

e. *"Bachelor's or the equivalent" degrees* includes all individuals whose highest earned degree is the bachelor's degree or a 4- or 5-year first-professional degree, or who have the equivalent in experience, even if they have not earned such a degree (line 2e).

Item 3. Part-time scientists and engineers, by field and function in which *primarily* employed, January 1978.

Instructions for item 1 relating to classification by field and function also relate to part-time professional staff in item 3.

In estimating the full-time-equivalents of part-time personnel in line 3i, take into account both the overall workload and the proportion of time spent on each of the three functions of activity. For example, if full-time workload is 40 hours per week, and an individual is estimated to spend 10 hours on teaching and related duties and 6 hours on research, his FTE values would be teaching—.25 (10/40); R&D—.15 (6/40). The FTE values should be accumulated for each function and *rounded to the nearest whole number* before entering the total on the questionnaire. The FTE values entered in columns 2, 3, and 4 should then be summed to arrive at the total to be entered in column 1.

Item 4. Part-time scientists and engineers, by highest earned degree and function in which *primarily* employed, January 1978.

Instructions for item 2 relating to the classification by field and highest earned degree also relate to part-time professional staff in item 4.

Item 5. Full-time scientists and engineers, by field in which *primarily* employed and sex, January 1978.

Institutions are requested to report total full-time scientists and engineers, by sex and field in which primarily employed. Data in column 1 (total of men and women) should equal data shown in item 1, column 1.

Item 6. Scientists and engineers, by field in which *primarily* employed, employment status, and full-time-equivalents (FTE's), January 1978.

Data in columns 1, 2, and 3 are derived from data reported in column 1 of items 1 and 3. To estimate total full-time-equivalents (FTE's) in column 4, take into account both allocation of effort, by field, and proportion of full-time workload accounted for by part-time personnel. FTE's in column 5 should reflect research effort of both full- and part-time professional personnel.

The following example showing how data might be reported in columns 1 through 5 is included for illustrative purposes only. For the sake of this computation, it is assumed that the data are estimated on the basis of detailed records on faculty activity. The Foundation recognizes, however, that the information systems at many academic institutions do not, in fact, yield data at this level of detail. In such cases, or in instances where institutions would be required to expend an excessive effort to produce the information in the desired format, your best estimates on an alternative basis would be completely acceptable.

Example

If your institution employs:

20 full-time chemical engineers
10 part-time chemiscal engineers
30

4 full-time electrical engineers
4 part-time electrical engineers
8

And:
Of the 20 full-time chemical engineers, 6 have split appointments (50-50 basis) with the electrical engineering department; thus, 14 are employed solely as chemical engineers.

All part-time personnel carry, on the average, one-third the normal workload.

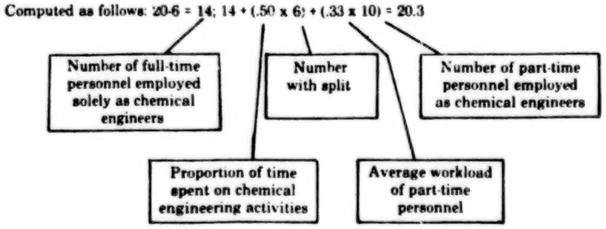
Concerning R&D effort, 12 of the 20 full-time chemical engineers and 2 of the 4 full-time engineers expend, on the average, one-fourth of their time on R&D activities.

Then, the data in lines 2712 (chemical engineers) and 2714 (electrical engineers) should be estimated as follows:

Item 6

Line	Total Headcount (Col. 1)	Full time (Col. 2)	Part time (Col. 3)	Total FTE's (Col. 4)	R&D FTE's (as percent of col. 4) (Col. 5)
2712 (chemical engineers)	30	20	10	[1]20	[3]15
2714 (electrical engineers)	8	4	4	[2]8	[4]6

[1] Computed as follows: 20-6 = 14; 14 + (.50 x 6) + (.33 x 10) = 20.3


Number of full-time personnel employed solely as chemical engineers
Number with split
Number of part-time personnel employed as chemical engineers
Proportion of time spent on chemical engineering activities
Average workload of part-time personnel

[2] Computed as follows: 4 + (.50 x 6) + (.33 x 4) = 8.33
[3] Computed as follows: .25 x 12 = 3; 3÷20 = .15 = 15%
[4] Computed as follows: .25 x 2 = .50; .50÷8 = .06 = 6%

Section B—Number of Technicians Employed in the Sciences and Engineering, January 1978

Item 7. Technicians, by field and function in which *primarily* employed, January 1978.

Technicians include all persons employed in positions which involve technical work at a level requiring knowledge in any of the fields of engineering, mathematics, physical sciences, environmental sciences, life sciences, psychology, or social sciences comparable to that acquired through formal post-high school training *(less than a bachelor's degree)*, such as that obtained at technical institutes and junior colleges or through equivalent on-the-job training or experience. All personnel performing the duties described above should be reported as technicians *even* if they hold a bachelor's or higher degree. Some typical job titles include laboratory technician or assistant, physical science aide, engineering aide, statistical aide, draftsman, and computer programmer.

Exclude graduate students; technicians involved primarily in patient care service in university affiliated hospitals; and craftsmen such as electricians, carpenters, machinists, etc. In the case where undergraduate students, juniors or seniors, are employed in R&D activities, they may, where applicable, be included as technicians.